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Committee on cost of health services



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3 Task Force Reports on
the Cost of Health Services
in Canada
Summary

(11)

Task Force Reports on the Cost of Health Services in Canada

Summary

Published under the authority of
The Honourable John Munro,
Minister of National Health and Welfare

1

Summary

2

Hospital Services

Utilization

Operational Efficiency

Salaries and Wages

Beds and Facilities

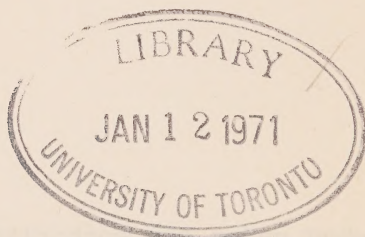
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Health Services

Delivery of Medical Care

Price of Medical Care

Public Health



Summary

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ACKNOWLEDGEMENT

The suggestions, concepts and recommendations contained in these volumes will be receiving full and continuing study by all governments in Canada. The complete report is a valuable contribution to the common goal of restraining the rate of increase in health service costs while maintaining and improving the quality of care.

The Ministers of Health of Canada gratefully acknowledge their considerable debt to the members of the Committee on Costs of Health Services, the seven individual task forces, the Secretariat, and to all others who contributed so unstintingly to this examination of a major national problem.

A handwritten signature in dark ink, appearing to read 'J. Munro', with a large, sweeping flourish at the end.

John Munro, P.C., M.P.,
Minister of National Health
and Welfare,
Chairman,
Conference of Ministers of Health.

November 1969.



DEPUTY MINISTER OF HEALTH
SOUS-MINISTRE DE LA SANTÉ
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Hon. John Munro, P.C., M.P.,
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Dear Mr. Munro:

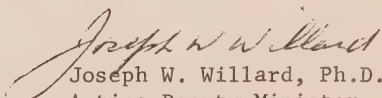
The Committee on Costs of Health Services was established by the Conference of Ministers of Health of Canada in November, 1968, to enquire into ways of restraining the rate of increase in health service expenditures.

Seven task forces were appointed by the Committee in February, 1969, to examine specific areas. Their reports in full constitute Volumes 2 and 3 of this Report. The Committee wishes to express its gratitude to the distinguished men and women who gave heavily of their time, knowledge and experience to serve on the task forces and on the Secretariat.

The Report constitutes the consensus of the Committee on subjects and recommendations considered useful for consideration and discussion by the Ministers of Health of Canada.

I have, then, the honour of conveying to you the Report of the Committee on Costs of Health Services.

Yours truly,


Joseph W. Willard, Ph.D.,
Acting Deputy Minister
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Chairman of the Committee

November, 1969.

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INTRODUCTION

The cost of health services has risen so rapidly in Canada in recent years that three alternatives are now imminent.

-- The standards of health care now available can be reduced, or;

-- Taxes, premiums or deterrent fees can be raised even higher, or;

-- Ways must be found to restrain the growth of cost increases through better operation of the health service structure now in existence, and serious consideration must be given to a future major revamping of the entire system.

The first alternative would negate the entire evolution of health services in this country, and would frustrate the continuing efforts of everyone to further improve the standards and facilities for physical and mental well-being now available. Gaps still exist. Services are not adequately distributed regionally, or between rural and urban areas, and all Canadians do not yet enjoy equal access to all health facilities regardless of personal income.

This is so despite the fact that the overall quality of Canada's health system is among the highest in the world, through a combination of individual dedication, public desire, and government action.

The second alternative - higher taxes, whatever their name -- brings with it self-evident objections. People are reluctant to pay more for health care; their governments are reluctant to seek more.

So it was with the third alternative - cost restraint - in mind a year ago that the health ministers of the federal and all 10 provincial governments created the Committee on Costs of Health Services.

In January, 1969, the Committee established seven task forces to examine ways of restraining future cost increases. This was a vital first step in discharging the Committee's mandate of:

a) advising the ministers of health on how to maintain health service costs at a reasonable level without adversely affecting the quality of care;

b) examining the costs of hospital services, medical care, and public health;

c) studying the rising costs of health services in Canada with the aid of a small task force of experts who would use existing knowledge to develop recommendations, standards and guides for practical action.

The task forces, composed of men and women with almost countless years of combined experience in the federal, provincial and voluntary health services, produced 348 recommendations. They touched on almost all aspects of the incredibly complicated and diverse aggregation of professions, skills, institutions, machine and systems, which provide Canada with one of the world's most advanced health care systems.

The seven areas of inquiry were:

Hospital Services:

Utilization,
Operational Efficiency,
Salaries and Wages,
Beds and Facilities,

Health Services:

Methods of Delivery of Medical Care,
Price of Medical Care,
Cost of Public Health Services.

The task forces were disturbed by much of what they found, and the points they raised were also of concern to the Committee. There were many examples where

economies could be achieved without in any way diminishing the quality of care. Often the introduction of modern cost efficiency techniques might well produce better service at less cost.

For example, more than one task force report argued that acute treatment hospital beds, by far the most expensive to build and operate, are being misused.

People may be admitted to these elaborate facilities when in fact their real medical condition requires a much less sophisticated, and therefore less expensive, level of care. Or, they might be kept in an acute bed longer than necessary, to cite just two situations discussed.

Other points, which are more fully developed in the task force reports which are published unabridged in the accompanying volumes, included assertions that:

- . There is competition and duplication between public and private interests in the health field.
- . The construction of additional acute hospital beds should be sharply curtailed in future, except in special circumstances.
- . Hospital administration, as now established in many places, leaves key officials virtually powerless to control costs in certain areas because they do not have effective financial jurisdiction over many of the departments they administer.
- . Doctors often do not sufficiently take into account the economic consequences of their decisions, such as the expense entailed when a person is admitted to hospital unnecessarily.
- . Mass screening programs for the detection of disease should be judged on a cost benefit basis. In one part of Canada it was found that the detection of a single case of tuberculosis cost \$30,000 - and some of the cases were already known to exist.

. At some points in the health system there is need for those concerned to arrive at a philosophical balance between highly expensive services of limited general application and facilities which can be used by greater numbers of people. Heart transplants in a major city versus the lack of any doctor at all in a rural town, for instance.

. Drugs are sometimes prescribed too often and too copiously. National guidelines for prescription should be established.

. Mass immunization should be undertaken by public health agencies, not private doctors.

. Medical fee schedules should be drawn up against a backdrop of more information than is now available; uniform descriptions of the schedules should be drawn, and governments should be informed of and in agreement with future fee increases.

. Some nursing services are misused both through maintaining the staff constantly at peak load levels, and through using graduate nurses for tasks not requiring their education and skills.

. Savings could be made by group purchasing of many items, from drugs to linens, and items should be standardized. One group of hospitals was found to be using 16 different types of bedsheets.

. Some hospital insurance plans offer little or no incentive to encourage hospitals to improve their efficiency and reduce their costs. The policy of the federal government in refusing to share in surpluses (savings) left with hospitals discouraged hospital insurance plans from offering incentives to hospitals.

. The demand on hospitals might be reduced by new health centres designed for diagnosis and treatment not requiring hospitalization; centres which might, at the same time, facilitate extension of services by virtue of strategic community location to persons not now

receiving them. The load on doctors might be reduced by experimenting with Physician Assistant or Practitioner Associate concepts.

These are just a few examples.

It is essential to understand that neither the points above nor the recommendations which follow have been accepted as policy, item for item, by the Committee and thus by the governments they represent.

Many of the recommendations are controversial in the specialized areas which they affect. Others could have substantial bearing on public habits and customs in seeking health care.

The task force reports are published now to facilitate both professional and lay discussion of a vitally important field which has seldom been subjected to so penetrating an examination. Appearing in this volume are a number of recommendations arranged in themes of applicability which have been selected by the Secretariat after meetings with the Committee, not because they have been endorsed as such, but because they are capable of technical implementation within a period of 1 to 3 years. This is not the full solution in itself. Additional work needs to be done.

Following the themes are a list of recommendations calling for research into specific areas wherein it is believed cost savings might be made on the basis of additional information. Finally, all recommendations are listed by task force.

And, very importantly, there appears a list of the names of all the people who performed dedicated service above and beyond the call of duty in producing and processing these reports.

The object of the exercise was not to establish "guilt" or "innocence". There was no search for scapegoats. Instead it was an attempt to put into economic focus a

vast patchwork of separate services, in themselves highly desirable for the most part, which evolved at different times and different places in different ways.

Four main points emerge:

1. Despite the wonders of science and technology which capture so much public attention, health care is still largely a matter of people caring for other people. Thus health is a labour-intensive industry and may in the years to come be the second largest employer of labour in Canada. Even now, 70 per cent of health costs are fees, salaries and wages, which means that a 10 per cent increase in wages represents a 7 per cent increase in costs.

Costs of health services relate closely to wage and salary levels in all industries, and additional cost increases in this area may occur. However, increased productivity and better operation of the health care system can reduce the impact of these increases upon total costs.

It is necessary that the efforts of this vast force of essential, dedicated people be deployed with the utmost skill to ensure maximum productivity on the part of each man and woman.

2. While the governments are not committed to this or that specific remedy they are faced with incontrovertible facts of finance.

In 1957 health services cost \$1.7 billion.

In 1967 health services cost \$3.7 billion.

In 1972 they might cost \$6.2 billion.

In recent years health care costs have been rising at an annual rate of more than 10 per cent.

Hospital service costs have been rising at a rate of 14 per cent.

This remorseless escalation of cost should not continue.

Selective use of federal and provincial contributions should in future be aimed at encouraging economy in the health services and avoiding financial rigidity which can lead to arbitrary procedures and entrenched inefficiency.

Only after major reforms in the health care system have been achieved should Canadians be asked to pay additional monies for maintaining and improving existing standards.

3. Every task force which touched the question, clearly felt that regional organization of all health services, involving central co-ordination of many facilities and agencies, was essential to cost efficiency.

Numerous task force examples attest to a present structure of administrative complexity, confusion, competition and inefficiency. Co-ordination among federal and provincial governments is essential.

4. In his daily life, sick or well, the average person sees only a fraction of the health services geared to the many needs of all Canadians. Yet the system exists solely to serve all the people, and without their understanding and co-operation, attempts to reorganize and strengthen it through cost efficiency will be infinitely more difficult.

This applies in even greater measure to those people responsible for operation of the system itself.

The stakes are high.

The annual increase in costs must be sharply curtailed or else something will have to give - the pocket of the taxpayer, the quality of the present service, or the most obviously desirable alternative albeit a most difficult achievement in terms of detail, debate and

compromise, the present structure must be reformed in all its aspects to continue delivering the goods while curtailing the rise of costs.

It is a vital challenge to all involved, which means every Canadian, layman or professional, and particularly those in positions of leadership and responsibility.

EXPENDITURES ON PRINCIPAL CATEGORIES OF PERSONAL HEALTH CARE (a)

CANADA, 1957 - 1967

Year	Hospital Services					Physicians' Services (d)	Dentists' Services (d)	Prescribed Drugs (e)	Total
	General and Allied Special (b)	Mental (c)	Tuberculosis (c)	Federal (g)	All Hospitals				
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1957	422,913	87,499	31,040	45,301	586,753	271,796	87,300	84,501	1,030,350
1958	462,305	99,007	30,410	48,416	640,138	301,337	98,100	90,285	1,129,860
1959	542,561	111,600	29,607	50,255	734,023	325,689	98,966	106,469	1,265,147
1960	637,609	121,794	31,560	53,877	844,840	355,014	109,644	101,473	1,410,971
1961	713,412	134,882	29,914	63,891	942,099	388,304	116,730	122,817	1,569,950
1962	802,853	144,419	29,086	70,314	1,046,672	406,075	121,491	125,224	1,699,462
1963	900,075	163,049	28,051	73,782	1,164,957	453,395	136,946	140,843	1,896,141
1964	1,003,677	182,064	25,878	76,812	1,288,431	495,657	147,824	154,361	2,086,273
1965	1,125,851	211,605	25,943	79,788	1,443,187	545,056	160,062	169,669	2,317,974
1966	1,300,541	241,793	26,230	82,072	1,650,636	605,200	176,402	190,341	2,622,579
1967	1,506,982	283,875	26,916	83,349	1,901,122	686,189(f)	187,166	239,478(f)	3,013,955

(a) Excludes certain professional services such as chiropractors, osteopaths, private nurses, optometrists, and podiatrists, eyeglasses and appliances, non-prescribed drugs, public health activities, and nursing home care, plus expenditure for new construction and for all education and research outside hospitals; excludes hospitals of the Department of National Defence 1957 - 1960.

(b) Includes general, maternity, chronic, and convalescent hospitals; excludes mental institutions and tuberculosis sanatoria, as well as all federal hospitals.

(c) Excludes federal hospitals.

(d) Excludes full-time hospital staff and those engaged primarily in administration, teaching, research, public health and industrial medicine.

(e) Sold by retail pharmacies only.

(f) Based on provisional figures.

(g) The number of federal beds was reduced as a percentage of total during these years.

SOURCE: Research and Statistics Directorate, Department of National Health and Welfare.

EXPENDITURES ON PRINCIPAL COMPONENTS OF PERSONAL HEALTH CARE, (a)
PERCENTAGE INCREASES OVER PREVIOUS YEAR, CANADA, 1958 - 1967

Year	Hospital Services						Physicians' Services (d)	Dentists' Services (d)	Prescribed Drugs (e)	Total
	General and Allied Special (b)	Mental (c)	Tuberculosis (c)	Federal (g)	All Hospitals					
	%	%	%	%	%	%	%	%	%	%
1958	9.3	13.2	- 2.0	6.9	9.1	10.9	12.4	6.8	9.7	
1959	17.4	12.7	- 2.6	3.8	14.7	8.1	0.9	17.9	12.0	
1960	17.5	9.1	6.6	7.2	15.1	9.0	10.8	- 4.7	11.5	
1961	11.9	10.7	- 5.2	18.6	11.5	9.4	6.5	21.0	11.3	
1962	12.5	7.1	- 2.8	10.1	11.1	4.6	4.1	2.0	8.2	
1963	12.1	12.9	- 3.6	4.9	11.3	11.7	12.7	12.5	11.6	
1964	11.5	11.7	- 7.7	4.1	10.6	9.3	7.9	9.6	10.0	
1965	12.2	16.2	0.3	3.9	12.0	10.0	8.3	9.9	11.1	
1966	15.5	14.3	1.1	2.9	14.4	11.0	10.2	12.2	13.1	
1967	15.9	17.4	2.6	1.6	15.2	13.4(f)	6.1	25.8(f)	14.9	

(a) Excludes certain professional services such as chiropractors, osteopaths, private nurses, optometrists, and podiatrists, eyeglasses and appliances, non-prescribed drugs, public health activities, and nursing home care, plus expenditure for new construction and for all education and research outside hospitals; excludes hospitals of the Department of National Defence 1958 - 1960.

(b) Includes general, maternity, chronic, and convalescent hospitals; excludes mental institutions and tuberculosis sanatoria, as well as all federal hospitals.

(c) Excludes federal hospitals.

(d) Excludes full-time hospital staff and those engaged primarily in administration, teaching, research, public health and industrial medicine.

(e) Sold by retail pharmacies only.

(f) Based on provisional figures.

(g) The number of federal beds was reduced as a percentage of total during these years.

SOURCE: Research and Statistics Directorate, Department of National Health and Welfare.

EXPENDITURES ON PRINCIPAL COMPONENTS OF PERSONAL HEALTH CARE, (a)

PER CAPITA, CANADA, 1957 - 1967

Year	Hospital Services					Physicians' Services (d)	Dentists' Services (e)	Prescribed Drugs (f)	Total
	General and Allied Special (b)	Mental (c)	Tubercu-losis (c)	Federal (g)	All Hospitals				
1957	\$ 25.36	\$ 5.25	\$ 1.86	\$ 2.72	\$ 35.18	\$ 16.31	\$ 5.24	\$ 5.07	\$ 61.82
1958	27.00	5.78	1.78	2.83	37.39	17.60	5.73	5.27	66.00
1959	30.96	6.37	1.69	2.87	41.89	18.59	5.65	6.08	72.20
1960	35.60	6.80	1.76	3.01	47.17	19.82	6.12	5.67	78.79
1961	39.05	7.38	1.64	3.50	51.56	21.25	6.39	6.72	85.93
1962	43.13	7.76	1.56	3.78	56.23	21.82	6.53	6.73	91.30
1963	47.46	8.60	1.48	3.89	61.43	23.91	7.22	7.43	99.99
1964	51.94	9.42	1.34	3.97	66.67	25.65	7.65	7.99	107.96
1965	57.21	10.75	1.32	4.05	73.34	27.70	8.13	8.62	117.80
1966	64.86	12.06	1.31	4.09	82.33	30.18	8.80	9.49	130.80
1967	73.72	13.89	1.32	4.08	93.01	33.57(f)	9.16	11.72(f)	147.45

(a) Excludes certain professional services such as chiropractors, osteopaths, private nurses, optometrists, and podiatrists, eyeglasses and appliances, non-prescribed drugs, public health activities, and nursing home care, plus expenditure for new construction and for all education and research outside hospitals; excludes hospitals of the Department of National Defence 1957 - 1960.

(b) Includes general, maternity, chronic, and convalescent hospitals; excludes mental institutions and tuberculosis sanatoria, as well as all federal hospitals.

(c) Excludes federal hospitals.

(d) Excludes full-time hospital staff and those engaged primarily in administration, teaching, research, public health and industrial medicine.

(e) Sold by retail pharmacies only.

(f) Based on provisional figures.

(g) The number of federal beds was reduced as a percentage of total during these years.

SOURCE: Research and Statistics Directorate, Department of National Health and Welfare.

EXPENDITURES ON PRINCIPAL COMPONENTS OF PERSONAL HEALTH CARE^(a)
PERCENTAGE OF G.N.P. AT MARKET PRICES CANADA, 1957 - 1967

Year	Hospital Services					Physicians' Services (d)	Dentists' Services (d)	Prescribed Drugs (e)	Total
	General and Allied Special (b)	Mental (c)	Tubercu- losis (c)	Federal (g)	All Hospitals				
1957	1.29	0.27	0.09	0.14	1.78	0.83	0.27	0.26	3.13
1958	1.36	0.29	0.09	0.14	1.88	0.88	0.29	0.26	3.26
1959	1.50	0.31	0.08	0.14	2.02	0.90	0.27	0.29	3.49
1960	1.69	0.32	0.08	0.14	2.24	0.94	0.29	0.27	3.74
1961	1.83	0.35	0.08	0.16	2.41	0.99	0.30	0.31	4.02
1962	1.90	0.34	0.07	0.17	2.47	0.96	0.29	0.30	4.01
1963	1.98	0.36	0.06	0.16	2.56	1.00	0.30	0.31	4.17
1964	2.02	0.37	0.05	0.15	2.59	1.00	0.30	0.31	4.19
1965	2.05	0.39	0.05	0.15	2.63	0.99	0.29	0.31	4.22
1966	2.12	0.39	0.04	0.13	2.69	0.99	0.29	0.31	4.27
1967	2.30	0.43	0.04	0.13	2.90	1.05(f)	0.29	0.37(f)	4.59

(a) Excludes certain professional services such as chiropractors, osteopaths, private nurses, optometrists, and podiatrists, eyeglasses and appliances, non-prescribed drugs, public health activities, and nursing home care, plus expenditure for new construction and for all education and research outside hospitals; excludes hospitals of the Department of National Defence 1957 - 1960.

(b) Includes general, maternity, chronic, and convalescent hospitals; excludes mental institutions and tuberculosis sanatoria, as well as all federal hospitals.

(c) Excludes federal hospitals.

(d) Excludes full-time hospital staff and those engaged primarily in administration, teaching, research, public health and industrial medicine.

(e) Sold by retail pharmacies only.

(f) Provisional figures.

(g) The number of federal beds was reduced as a percentage of total during these years.

SOURCE: Research and Statistics Directorate, Department of National Health and Welfare.

CO-ORDINATED GOVERNMENT PLANNING

Governments at all levels must recognize that they should lead in planning, setting standards, and encouraging research and education in the health care field to promote and safeguard the health of the Canadian people. They must now, as well, concentrate on organizing health facilities and services into effective, efficient, and economical systems of comprehensive health care available to all.

Co-ordinated planning is needed to evaluate health care needs, assess resources, define goals and objectives, establish priorities, and determine courses of action for the co-ordinated development of health services. If the full potential of the health sciences to society is to be realized, a true partnership with the public and voluntary sectors is essential. Only government commands the financial and organizational resources, and the authority, to undertake the required changes.

All provinces should have an overall program of health care delivery which will eliminate the lack of co-ordination among health and welfare agencies. Planning organizations should become health, rather than simply hospital planning groups, and must implement area-wide programs within the framework of a province-wide program. Special emphasis needs to be placed on programs for the elderly, for low-income groups, and for other disadvantaged sectors of the population.

RECOMMENDATION:

Administrative arrangements should be made to provide full co-ordination of the total health care delivery system at the provincial level, with health services, welfare services, mental health care, hospital care, and medical and ancillary care as elements of a single function and overall plan.

Greater emphasis should be placed on defining the needs of elderly, low-income, and other disadvantaged groups, and on evaluating the programs now directed at these groups, in order to achieve a judicious allocation of resources in relation to anticipated results.

IMPLEMENTATION:

Government

Provincial governments should insist upon greater co-ordination of health and welfare activities in each region, should arrange for co-ordinated planning of facilities and programs, and should ensure that the disadvantaged groups in the province are allocated the share of the health resources they need.

The federal government should ensure that national standards and guidelines are available, and co-ordinate its legislation to the highest degree possible to further the objectives of provincial governments, so the Canadian citizen has available the resources necessary to meet his or her needs.

Medical

Physicians must be prepared to see themselves as part of the total health team serving patients in their community. The system is dependent upon close co-operation between physicians and all the other segments of the health care delivery plan.

Hospitals

Hospital boards and administrators must see their facility as an integral part of a system designed to meet total health needs economically, not as an isolated and competitive entity. Expansion should be based solely on regional needs for health services, not on institutional aspirations. They should plan their services and facilities with respect to the community they serve,

recognizing that their responsibility is shared with other institutions in the same area.

Government planning should take into account the needs of hospital administrations and medical associations for better information and advice on establishing levels of remuneration. Since hospital salaries and medical fees are the two main elements in rising health care costs, governments must be prepared to assist the people responsible for determining these salaries and fees in arriving at the most appropriate levels in the light of all available information.

RECOMMENDATIONS:

Governments should provide continuing expert consultative, research and advisory services to both hospital management and unions, to improve collective bargaining systems and dispute settlement procedures and thus achieve better services to patients combined with maintenance of the rights of social justice of health workers.

Governments should make available to medical associations full data regarding frequency and costs of medical services and ranges of gross and net payments to doctors according to specialty and region to aid them in the development of rational fee schedules.

Government agencies and medical associations should discuss and agree upon the total percentage change in physicians' net incomes that should be achieved by a new fee schedule before the schedule is revised.

IMPLEMENTATION:

Government

Provincial governments should make available to hospital administrations and medical associations the information and the expert advice that will help them make rational decisions on salary rates and fee schedules.

The federal government should collect data on salaries, fees and costs, undertake or sponsor research, and supply analyzed information to provincial governments and providers of services. For example, the federal government should provide medical associations with information on physicians' practice expenses by region and specialty, and provide hospitals and hospital association with data on wages and salaries.

Medical

Physicians must also be prepared to use information provided by provincial and federal agencies in order to arrive rationally at appropriate levels of fees for their services.

As reported by one task force, more than 95% of health costs are spent on hospital and medical care services - the treatment component. The public health preventive aspects constitute less than 5%. An increase in this minor non-treatment component could be quite substantial without affecting the total costs significantly, yet the increase might result in an important contribution to the objective of "maintaining the costs of health services at a reasonable level".

A number of recommendations for expansion of public health services have been made but those pertaining to immunization are especially significant and practical in terms of immediate implementation and potential results. In addition to proposing guidelines for standardized immunization procedures with possible reduction in numbers of booster shots and smaller dosage, it is emphasized that immunization should be carried out by public health nurses in the interests of reducing costs and improving coverage and records.

RECOMMENDATIONS:

Communicable disease control programs should be expanded, particularly through aggressive

planning and operation of immunization activities.

Immunization procedures generally should be carried out by public health nurses under physician supervision in public health agencies.

Immunization procedures should be standardized within each province by the preparation of guidelines for medical health officers as to what is an adequate level of immunization, including the possibility of using smaller doses of vaccine and reduced number of booster shots.

IMPLEMENTATION:

Government

The Department of National Health and Welfare should take the initiative in preparing and publishing promptly, with the advice of expert and advisory groups as required, guidelines for immunization procedures and for the operation and evaluation of immunization programs. The provincial health departments should stimulate, finance, and otherwise support expanded and intensified immunization programs and services in health districts, units, and departments, and should obtain professional and public understanding of the purposes of such services.

Medical

The understanding and agreement of the medical profession and particularly practicing physicians, general practitioners and paediatricians, would be required to make the recommendation effective.

REGIONALIZATION

The concept of area-wide or regional planning for health facilities and services has been accepted as a viable, effective approach, and is required if integrated and balanced health care systems are to be achieved. The need is so evident and the economies and improvements so significant, that regional planning should proceed immediately. Its purpose is to evaluate health care needs, assess resources, define goals and objectives, establish priorities and decide on courses of action for co-ordinated development of health services and facility needs. Planning is essential for all health care institutions and agencies, and it must be a continuing process.

Planning total health services is too important and complex for any single organization to handle alone. Accordingly, a true partnership of comprehensive health planning between the government and voluntary sectors is essential in each province.

Only at the regional level can sufficient perspective be gained to effectively organize and integrate the varied health resources of the area concerned. Depending on population and geographic area an entire province, or more than one province, could constitute a region for certain services or planning purposes.

However, such planning must itself be subordinate to a revamping of total health care planning at the provincial level. In other words, it is essential for the province to have an overall program of health care delivery which recognizes both the existing problem areas between health and welfare and the need for regional planning organizations to implement area-wide programs within the provincial framework and authority. This

requires that regional planning organizations become health planning groups as rapidly as possible, rather than remaining simply hospital planning groups.

After the role of each health facility has been established within the context of the regional health system:

- 1) each health care facility or agency is responsible for providing its services to the community and region, not as an isolated and competitive entity, but as an integral part of a system designed to meet the total health needs of the people effectively and economically;
- 2) each health care facility should be established, modernized or expanded solely in relation to regional needs for health service, rather than based on the history and aspirations of the institution;
- 3) each health care facility should plan its services and facilities with respect to the market area for specific health services the facility is to provide, which area may be shared with other institutions;
- 4) each health care facility should undertake only those services where the volume and scope of needs will provide an adequate foundation on which to build an economic and effective service with high professional standards.

RECOMMENDATIONS:

1. The organization of regional health planning boards should be encouraged. Boards should be composed of representatives of hospitals, other health and welfare agencies, medical profession and other appropriate groups.

In an advisory capacity to the provincial authorities, the main responsibilities and functions of the boards would be:

- A) Continuing planning and development of a regionalized, comprehensive, integrated, and balanced health care system of services and facilities within the context of the region's spectrum of health services.
- B) Carrying out research or studies with a view to determining the actual needs of the area and how they can be resolved in the most effective and efficient manner.
- C) The improvement of communications between agencies and the fostering of effective co-ordination of health activities within the region; the definition and clarification of the role of each hospital and the services it would provide.

2. No change in physical facilities or services which significantly affects the nature of any health care institution or service should be undertaken without the prior review and recommendation of the regional board.

The responsibility of regional boards should extend not only to the recommending of new and expanded facilities, but also to the conversion to alternate use or closure of facilities.

No further approvals for the development of acute care facilities (active treatment general hospitals) should be granted until regional studies of comprehensive health care requirements have been carried out and approved by the appropriate provincial authorities, and that approval for future health care facilities, and for major renovation projects, be made contingent on the regional board reviewing and recommending on the same.

3. As a first step toward eventual organization of all health services, regional hospital boards should be set up.

The board would be composed of representatives of each hospital and would have representation on the regional health planning board.

The regional hospital boards would have executive authority granted by the provincial authority on specific activities or functions such as:

- A) the grouping of hospital services - laundry, linen, dietary, computer and consultant services;
- B) group purchasing of supplies or services - drugs and medical supplies, linen, kitchen supplies, fire and insurance coverage.

IMPLEMENTATION:

Government

The establishment of the Regional Health Planning Board would be initiated by the governmental authorities in collaboration with the various agencies concerned. The operating cost involved would be the responsibility of the provincial authority. It would be also a government responsibility to determine the area covered by each region.

Regional Hospital Boards would operate on a budget basis approved by the hospital insurance plan. The total approved expenditures would then be prorated between the hospitals within the region.

Hospitals

It will be the responsibility of each hospital within the area to determine how it could use in the most efficient manner the various services offered by the regional board, and to subordinate its individual aims so that the service requirements of the region can best be achieved.

If regional planning is to work, the medical profession must be directly involved. Also, the medical staff can no longer be solely organized on a single hospital basis if effective delivery of medical care on a regional basis is to be provided.

RECOMMENDATION:

Medical involvement in regional planning should be accomplished through such mechanisms as representation on the regional board and establishment of representative and responsible regional medical staff groups advisory to the regional board.

IMPLEMENTATION:

Medical

The medical profession should make a major contribution in this area. Physicians should be encouraged to participate in order to obtain full awareness of the total picture and be in a position to refer back to their colleagues the decisions of the planning groups and the reasons for these decisions.

UTILIZATION

A major element in health costs is ensuring efficient utilization of hospital and physician services. All task forces devoted considerable time to this problem and recommendations are found in almost all their reports.

Doctors commit large sums of public money whenever they admit and treat a patient in hospital. Too frequently, they fail to recognize and accept responsibility for the financial implications of their decisions. Each hospital admission is a serious, deliberate act requiring thought and planning not only by the patient but by the doctor. Therefore an admission to hospital should only be requested in the context of a clearly defined purpose and previously thought out plan. One way to improve the utilization of hospital in-patient facilities is to ensure that only those cases requiring such facilities are admitted to them and for only as long as they require them.

In the case of elective admissions, hospitals have traditionally been responsible for committing personnel, time and effort to obtaining information from the patient for administrative and clinical purposes. Although the administrative data is a requirement pertinent to the hospital there is no question but that the clinical information which has been obtained prior to admission should be documented and accompany the patient at the time of admission. Such documentation should preferably arrive prior to admission to serve as an aid to scheduling the work load of hospital departments involved. This information should include complete identifying data of the patient, previous history, history of present illness and a statement of all investigative procedures and their results carried out prior to

admission and the treatment measures intended in hospital. This procedure would also serve for admission screening as part of a continuing hospital utilization review program. An efficient medical records department is vital to the successful implementation of this recommendation.

Close co-operation with all health facilities is essential as well to ensure rapid and free exchange of the required information.

A basic issue in utilization is the effective management of hospitals which depends in turn on good organization and trained personnel. Good organization means balanced, co-ordinated operation of services throughout the whole spectrum of health care. It means competent supervision and clear communication. Hospital in-patient facilities must be used only for those patients who require them.

RECOMMENDATION:

For all elective admissions, a history, a description of pertinent physical findings, and a statement of the proposed diagnostic and treatment regime, should all be presented to the hospital prior to the admission of the patient. This should be a mandatory condition of admission for the elective case. Where possible, a note of previous pertinent investigative results should be supplied. With regard to genuine emergency admissions, it should be mandatory that such a record be placed on the chart within twelve hours. The implementation of these proposed mandatory conditions for admission of a patient should be the responsibility of the hospital administrator.

IMPLEMENTATION:

Government

Provincial legislation must be altered where necessary to indicate most clearly that this procedure is mandatory.

Medical

Such a marked change in traditional admission procedure would require the fullest possible understanding and support of the medical profession.

Hospitals

Internal by-law amendments might be necessary to implement and enforce the recommendations, which will require the authority and direction of the administrator and utilization committee for success. At the same time, in return for shifting the documentation process from itself to the physician's office, the hospital must maintain a first class records department.

The Public

The recommendation would also represent a radical departure from past custom for the individual patient and his family, who must, through education programs, be persuaded that the measure has been developed as a cost saving device and that the patient will suffer no personal loss because the alternative services will be covered by the National Medical Care Plan as it is implemented.

All hospital services are a response to one thing and that is the decision of a doctor to use facilities for the diagnosis and treatment of a patient. Thus norms or generally accepted criteria for the use of hospital treatment and diagnostic services should be developed. Without these, hospitals are handicapped in efforts to ensure rational, genuinely effective use of patient facilities. This is an area where the hospital medical staff can make a vitally necessary contribution to good hospital management.

RECOMMENDATION:

The medical staff should develop norms or standards for the use of hospital treatment and diagnostic services, particularly

in the admission, investigation, length of stay and discharge areas. Once developed by the medical staff, an appropriate medical staff committee, with the assistance of the hospital administration, should be given the responsibility for applying them.

IMPLEMENTATION:

Government

Provincial governments should set up committees in co-operation with various hospitals or planning groups to study the norms for given hospitals or regions

Medical

The medical profession must be prepared to co-operate as members of the hospital medical staff in serving on committees and in such other ways as would be required to develop realistic data which can be applied on a practical basis.

It has always been considered by doctors that it is their right to order any test they wish and expect the results to be forthcoming from the hospital without question.

RECOMMENDATION:

A utilization committee should be mandatory in hospitals with a medical staff organization to regulate practitioner access to diagnostic services, control new techniques and new procedures, control informal research and regularly review routine orders. The Directors of diagnostic departments should be given authority to carry out the policy laid down by the utilization committee within their departments.

IMPLEMENTATION:

Government

Although governments would not be directly involved in establishing such committees they would

certainly be in a position to co-operate with both individual hospitals and regional planning groups fostering this concept and can encourage its inclusion in hospital by-laws. After a reasonable period governments should make norms and utilization committees mandatory.

Hospitals

The hospital, through its Utilization Committee, the hospital administrator and the directors of diagnostic departments concerned, would be called upon to enforce the regulations and would also be involved in the overall planning of hospital policy in which these matters were discussed.

Intelligent hospital utilization means that patients should stay in acute treatment beds no longer than necessary. At an appropriate time they can be discharged or transferred to other levels of care. Hospitals, then, should invoke social service concepts to ensure that discharge or transfer of the patient can be planned, in his best interests, in advance. In this way more efficient use can be made of all health facilities.

Ideally, in hospitals large enough, the social service person involved should be a social worker or a nurse qualified in that area. This discharge planning officer would be a key member of discharge planning committees, which would have medical membership. Under this system the patient would be visited early in his stay so his condition could be assessed and arrangements made for services and treatment at the proper level of care either inside or outside an institution.

RECOMMENDATION:

All hospitals should have a discharge planning activity. The discharge planning group should have medical leadership, and representation from community health agencies should be invited.

In hospitals of more than 200 beds the person in charge of the discharge planning group's operation could be a social service worker, a nurse, or similar qualified person interested in this type of activity.

IMPLEMENTATION:

Government

Governments would not be directly involved in this activity except that the referral services and referral destinations of patients might be governmental or quasi-governmental in nature. In such cases governmental action would be required in order to co-ordinate the whole activity.

Medical

The medical profession has a strong part to play in the successful operation of this program both at the committee level and also in the role of attending physician.

Hospitals

The hospital staff, through its discharge planning group, would assume the major responsibility for the execution of this program and possibly the key figure in the whole group would be the social service organizer who would have direct contact with the patient and with the utilization committee.

Physicians play a major role in the utilization of services and, thus, in the resulting costs of personal health care. Those who habitually over-service their patients can be detected statistically and paid at a lower than normal rate. Similarly, restrictions can be placed on patients who abuse their insurance.

Even though the statistical methods used in the past to measure servicing or utilization patterns have produced infrequent cases of abuse, and thus have made little visible impression on total costs, the knowledge

that regular reviews are being conducted may in itself have a restraining influence on costs.

RECOMMENDATIONS:

Medical care plans should appoint medical review committees of practising physicians to initiate continuing studies of the patterns of practice of all physicians. These studies should also be used to identify excessive use of laboratories and other diagnostic services. On the recommendation of the Provincial Medical Association, government medical care plans must be prepared to impose financial penalties on physicians where it has been demonstrated that they have been guilty of over-use or abuse. The plan should also take steps when it is shown that members of the public are similarly guilty in requesting physicians services.

IMPLEMENTATION:

Government

Legislation should establish the review committees where necessary. Medical care plans should provide profile data to the committees, which should be made up of physicians knowledgeable about patterns of practice in their own geographic areas and medical fields. The committees, in turn, must make recommendations back to the plan when substantial deviations from the norm are uncovered. The medical care plan should inform the hospital plan of these deviations when they affect hospital utilization.

Medical

The profession, through its provincial associations, must be prepared to accept responsibility for serving on these committees and for making recommendations back to the associations which would in turn convey them to the government agency.

PLANNING HOSPITAL FACILITIES

The cost of hospital insurance is directly related to, and largely dictated by, the number of hospital beds built and in operation. Past priority seems to have been heavily weighted in favour of the general hospital and related acute treatment facilities.

A primary recommendation is made in this area. There are in Canada about 500 beds located in acute hospitals of less than 10 beds, and 4,000 beds in ones of less than 25 beds. Small units such as these are not conducive to efficient care of acceptable quality. A minimum size should more appropriately be 75 to 100 acute beds with ample provision for ambulatory services. In major urban centres the appropriate minimum should be higher.

However, in this country the travel time can be great between a small community and the nearest larger community, so some guides are suggested for provincial authorities when road travel time of more than one and a half hours at reasonable speeds is a factor. Where travel must be by air or water, factors such as availability of transport and weather conditions should be taken into account also.

RECOMMENDATION:

The only occasion for considering a hospital of less than 75 to 100 beds is where travel time to a community hospital exceeds one and one-half hours; a small hospital might then be considered for an area with 5,000 to 6,000 population, which might be expected to attract a minimum of two and preferably three physicians. Such a facility would be expected to send out a significant proportion of its

cases to a larger centre leaving a local need of about 30 beds.

IMPLEMENTATION:

Government

Regional and provincial authorities must study and make decisions applicable to their particular areas using these figures as a guide, noting the proviso in the Recommendation concerning sparsely settled areas, and the need for rendering adequate service in rural areas. Full scale hospitals may not be necessary.

Public

Education of the public with regard to the un-economic use of small hospitals is a difficult problem, but it is one which must be pursued with more vigor because there is no question that in many areas of Canada this constitutes a major obstacle to the reduction of health care costs.

There are in acute general hospital beds a significant number of patients who could be more appropriately handled at other levels of care, thereby reducing the cost to the community in the long run. Shifting patient care from active hospital admission to alternate in-patient or ambulatory facilities would save both capital and operating costs per case treated. However, there are gaps in the existing system. Patients at the borderline hospital admission level in most provinces are neither clearly the responsibility of the hospital plan, nor, in all instances, of the welfare department.

In order for economic alternatives for in-patient care to be fully developed and utilized, the alternative must be of an insured character. The individual patient faced with direct personal expense will not readily permit himself to be transferred to an institution that is not an insured service. Provincial authorities should be definitive in deciding which services should

be insured under the Hospital Insurance and Diagnostic Services Act and which should be insured under other programs. If possible, a common approach should be adopted across Canada.

Finally, there is now a disproportionate number of beds available for acute care as opposed to chronic or extended care.

RECOMMENDATION:

In general, planning should give lower priority to additional acute in-patient facilities than to upgrading, replacing, or remedying the deficit elements in the system such as ambulatory care, diagnostic facilities, community health centres or long-term institutional facilities. Criteria for adding new acute beds should be:

- A) inadequacy of present supply to meet existing measurable demand;
or
- B) no capacity to meet present demand projected for a predicted population five years hence.

Additional exceptions should also be made for new acute construction that will not expand total bed supply, e.g., replacement of condemned facilities, extension in one community to serve another where small hospitals are being closed, and for remodelling. In both cases it should be demonstrated that the new construction or remodelling will:

- A) meet an existing service need,
- B) improve quality in some way that can be measured, or
- C) deliver medical care at a lower cost than before.

IMPLEMENTATION:

Government

Government grants should be made available for modernizing, remodelling, or replacing obsolete

facilities and for filling deficits in the system. Boards of hospitals and regional planning groups should recognize these principles.

Through planning, specialized services in Canadian hospitals should insure maximum availability of facilities and economy of services within existing or potentially available resources. This implies reasonable deployment of facilities according to the geographic characteristics of the area; maintenance of adequate standards of staffing in terms of current practice; an organization of services in a manner to ensure maintenance of high standards and efficient use of highly specialized personnel and facilities. The last is particularly important in conserving scarce resources and in maintaining costs at a minimum level compatible with high standards of service.

RECOMMENDATIONS:

Burn units - these should be restricted to major metropolitan areas;

Coronary care units - hospitals should meet the following requirements:

- A) staff must be specially trained and experienced;
- B) coverage by staff must be adequate;
- C) after establishing a formula, the beds required for given cases can be estimated. Hospitals with a work load requiring less than two beds should consider the development of a joint coronary care-intensive care unit. A figure of two beds constitutes a full work load for a specially trained nurse on a 24-hour basis.

Intensive care unit - a formula of 3-4% of the medical and surgical beds as representing the intensive care requirement of the hospital should be used. Hospitals with a work load requiring less than two beds should consider the

development of a joint intensive care-coronary care unit. Cardiac surgical facilities should be restricted to the major teaching centres. It is not likely that a region with less than 500,000 population would generate the required minimum work load. Only an area of more than one million population might justify the use of more than one such unit.

Radioisotope facilities - therapeutic radioisotope services and other diagnostic services involving patient scanning should be limited to hospitals serving major geographic areas when:

- A) need for good care makes a unit necessary;
- B) adequately trained staff are available.

In other hospitals, diagnostic services involving small quantities of radioactive material of low toxicity and simple counting devices should be considered when these procedures constitute an economically sound alternative to the more conventional laboratory procedures.

Dialysis centres - it is recommended that dialysis centres be established in hospitals and metropolitan areas where the caseload can justify an active nephrology service. Such centres should be related in all instances to a renal transplantation centre in a major metropolitan area.

IMPLEMENTATION:

Government

Provincial governments and regional and area planning councils must take an active and very firm stand in determining and enforcing the criteria which should be utilized in any particular situation. This could be encouraged by fiscal incentives for hospitals to direct and staff facilities according to the approved decisions of those responsible.

Medical

The medical profession must be made aware of the planning decisions and the reasons for them, and be persuaded to alter their patterns of practice in order to achieve the most economical and efficient use of the minimum necessary facilities.

Public

The public should be made aware of the fact that the locale and development of special centres is based on thorough and rational planning which represents the most economical and efficient use of facilities, and at the same time guarantees quality.

During recent years there has been a rapid increase in the use of hospital emergency departments. Such departments today handle not only emergency and urgent cases, but a very large volume of non-urgent general practice patients. In urban hospital emergency departments often more than 50% of the caseload is general practice or routine out-patient activity. A number of factors are involved, such as the transient nature of the population, the habit of new Canadians to seek medical care directly from hospitals, a blurring of the doctor-patient relationship, a withdrawal of physicians from the practice of giving medical care in the home, and the ease of individual travel.

RECOMMENDATION:

Specialized emergency facilities and services, particularly in urban areas, should not be distributed among all hospitals in that area. One institution (in larger cities more than one), should be designated as the emergency centre for the area. This centralized emergency service would be staffed with highly qualified people with the necessary sophisticated equipment, and would be able to offer a truly comprehensive emergency service.

IMPLEMENTATION:

Government

Provincial governments and regional planning groups must be prepared to lay down definitive guidelines for the proper location of centralized emergency services.

Medical

The medical profession must be prepared to co-operate in encouraging the development of such specialized services.

Public

A vigorous campaign must be made to enlist the co-operation of the public in bringing about these changes. This is a major point because it will take a concentrated education program to deter people from going directly to any hospital for any type of care on an out-patient basis as is presently the pattern.

TEACHING FACILITIES

There is evidence that co-operation between universities and existing hospitals has been inadequate in some areas. As a consequence there has been over-bedding and duplication of facilities to meet university requirements for teaching. In this connection it should be noted that approval for a residency in several medical specialties is based on the number of beds assigned to the service rather than on the volume of in-patients, and out-patients, handled by the service.

Some universities try to emulate medical schools in major metropolitan areas and press for highly sophisticated patient treatment and research facilities, when there is insufficient evidence that an adequate patient volume for these services exists. Rational planning, including the principle that all the units in the system do not have to attain the same level of sophistication, should apply as equally to medical schools as to service hospitals.

The creation of separate treatment facilities under the control of, or for the use of, the university should not be accepted as the only solution for university teaching problems.

RECOMMENDATIONS:

Planning for university teaching facilities should be reviewed by the regional planning body to ensure that facilities are not being built unnecessarily. Universities should demonstrate the impossibility of using existing facilities for teaching purposes.

The federal and provincial governments should give joint consideration to the need to ensure that where highly developed teaching and research facilities exist they should be used by other medical teaching

units wherever practical, rather than duplicating the same level across the nation.

IMPLEMENTATION:

Government

The federal and provincial governments should review all aspects of present and planned future support for university teaching hospitals and "Health Service Centres". To achieve any level of success in carrying out these recommendations universities must be prepared to objectively review their requirements for teaching facilities within the university, within the province and even inter-provincially.

Medical

The profession must be prepared to co-operate since there will undoubtedly be some dislocation of the traditional relationship in realigning service and teaching needs within specific hospital areas.

OPERATIONAL EFFICIENCY

Hospitals could be more efficient. The activities of hospitals of 100 beds and over offer the largest scope for improvements, although the conclusions and recommendations applicable to these would, in most cases, have ramifications for smaller hospitals as well.

Industrial management techniques and standards have not been employed to maximize the contribution of financial resources allocated to the health services industry.

Consulting firms with hospital experience have indicated that effective productivity can be raised between 10-30% by the use of work study techniques. There are instances in which these techniques have been used effectively in a few large hospitals with a significant decrease in operating costs. This should be done in every hospital.

RECOMMENDATION:

Groups of work study personnel should be established in each province to carry out work studies in hospitals and to insure that approved recommendations are implemented.

IMPLEMENTATION:

Government

In each province the hospital insurance plan, assisted by the federal government and provincial hospital associations, should organize a plan of action, commence work studies, prepare a three to five year rough timetable, and persuade hospital trustees and administrators that this idea would work to their benefit. It may be that certain governments would want to work in conjunction with each other in this area.

Hospitals

Administrators would have to provide the leadership to encourage work study in their hospitals. Once the general idea was accepted by the trustees, the directors of hospital departments would require orientation and would have to ensure that work study techniques would be fair to the employees.

Medical

Because work study techniques would affect hospital staff in various departments where physicians work closely with these people, the medical staff should understand and support the purposes and techniques of work study.

There are weaknesses and problems in nursing service departments which decrease operational efficiency and increase the cost of care to patients.

There is mismanagement of nursing resources. A considerable amount of time of registered nurses and aides is wasted in ritualistic or traditional activities without regard to patients' "needs", i.e., taking temperatures three or four times daily on every patient regardless of whether or not it is necessary, changing bed linen on every bed daily even though the patient may have been in it for only a few hours.

Present methods of staffing nursing units are not satisfactory. Some are staffed on a yearly basis for maximum nursing care load. This results in over-staffing during slack periods.

Present admitting policies also create problems in staffing. Assignment of patients to nursing units is poorly balanced, which tends to create an excessive work load in one nursing unit, while at the same time another unit may experience a noticeable reduction in the amount of nursing care required.

RECOMMENDATIONS:

Nursing care should be planned on the basis of an analysis of the individual patient's needs, not on "routine" or traditional practices. This would tend to eliminate activities done on a ritualistic basis, save nursing care time, and lead to more equitable staffing on days and evenings.

Nursing units should not be staffed for the maximum nursing care load. Additional personnel should be employed as required to take care of an increased nursing care load.

Admitting policies and procedures should be reviewed and changed to provide for more equitable distribution of patients to nursing units, based upon available resources in the unit.

IMPLEMENTATION:

Government

Nursing consultants can provide hospital administrators with particulars of studies which would assist hospitals to understand what could be involved in implementing this recommendation.

Nursing consultants of provincial hospital plans could be used to conduct seminars and conferences to show the nursing profession that there are sound reasons to up-date nursing practices. Nursing school directors and educators must also be sold on this concept so that their teaching programs may reflect it.

Hospitals

The administrator must support his Director of Nursing, so she can implement these changes.

The administrator must explain what is involved to the full medical staff because they could be concerned about its effect on patient care.

Medical

This recommendation, to succeed, must be explained to all physicians and must have their active support. Arrangements should be made to see that the proposal is understood and accepted before any alterations are made in staffing.

The lack of standardization of linens in hospitals results in higher manufacturing and distribution costs, less opportunity for effective centralized purchasing, and complicates the washing and distribution of linen processed in central hospital laundries.

The use of standardized linens in hospitals can be beneficial in many areas. The fact that the mills can schedule their looms for long runs will reduce their set-up costs and savings can be passed on to the customer. Both mills and linen suppliers can warehouse larger inventories which will facilitate deliveries and reduce the amount of high priced storage space required at the hospital.

Centralized purchasing for a group of hospitals could then employ volume buying power to increase competition among the suppliers.

Agreement by hospitals on a regional or provincial basis as to size and nature of linens would significantly lower operating costs and increase operational efficiency.

RECOMMENDATION:

Hospitals, on a regional or provincial basis, should adopt, through group action, standard linen material and size to facilitate the manufacture and distribution of linen supplies.

Centralized purchasing and the feasibility of central laundries should be studied by groups of hospitals on an area basis.

IMPLEMENTATION:

Government

Provincial hospital insurance plans should take the initiative to meet provincial hospital associations and representative hospitals to plan and organize a local group in each area to carry out details of this proposal.

Hospitals

The trustees in each hospital should review and accept this recommendation and arrange for the administrator to meet with other administrators and report back on progress. Top management must be involved and support the idea.

Medical

Surgeons will be particularly interested in this proposal. To overcome resistance to change, there must be good liaison with the administrator, and understanding of the reasons for the change.

Traditional methods of purchasing in hospitals require a fundamental change. The concept of "creative purchasing" in industry begins with quality specifications and the emphasis is shifted from "price-buying" to "end-use-cost". Surveys prove that trustees and administrators do not know of these new techniques, or in most cases pay only lip service to them. Purchasing for value is closely related to inventory levels of supplies. In a number of hospitals it was established that practically all were overstocked, resulting in various degrees of storage problems and obsolescence of supplies. It appears possible that working capital invested in hospital inventories may be reduced 10% to 20%. Avoiding the cost of scrapping obsolete inventory items could also result in substantial savings.

RECOMMENDATIONS:

Provincial and federal authorities should support fully the task force's recommendation regarding the "principal purchasing method" as it pertains to "value analysis".

Provincial authorities should urge hospitals to prepare once a year an Inventory Cost Calculation, which should include at least:

- a) The purchase cost (quantity in dollar value carried times 20 - 25%, or any other accepted percentage).

This cost calculation may have to be broken down in major supply items and compared to previous experience and budgets, and could become a routine requirement on an annual basis. Furthermore, the hospitals should be urged to increase annual joint contractual buying with bidding procedure and drop shipments.

IMPLEMENTATION:

Government

Basically these recommendations require hospital action, but to encourage and initiate this, provincial hospital insurance plans should take active steps to have hospitals study the implications, and to arrange for individual hospitals to make the change.

Hospitals

Administrators and trustees should recognize the advantages of improved techniques and set up target dates for achieving the changeover. Efficient use of working capital is a trustee function, as well as elimination of inventory waste. All staff involved in purchasing and inventory activities should be fully oriented to the new procedures .

Medical

Medical staff should be informed, and their assistance requested, because physicians requisition many of the medical and surgical supplies and drugs.

Diagnostic services in Canadian hospitals range from those using relatively simple techniques to those with highly sophisticated procedures. The demand for these services has increased greatly in recent years and it will likely continue to increase.

Because the information produced by these services is necessary to determine diagnosis and treatment, delays in carrying out the test or in passing on the results may lengthen the stay of patients in hospital. As a result, scheduling and optimum utilization of diagnostic services is essential.

RECOMMENDATION:

That hospitals be charged with the development of a diagnostic services scheduling program so that there will be no undue delays.

Regardless of hospital size, type of treatment, or the specialization of the medical staff, there is no concerted effort in group buying of "core" drugs by most Canadian hospitals. Hospitals have been perpetuating outdated, traditional concepts of drug purchasing, resulting in serious lack of economy which contributes to rising operating costs. Hospital administrations should investigate the feasibility of large volume and group buying. The task force reports indicate that this program is effective and dollar savings can be achieved through the joint co-operation of hospital pharmacists and physicians. While this recommendation applies to core drugs, all areas of hospital supplies are potentially suggested - insurance, oil, and raw food.

RECOMMENDATION:

Group purchasing techniques in the pharmaceutical area should be immediately introduced province-wide for core drugs because:

- a) Drug prices would at least be reduced to the level of the hospital which pays the lowest price;
- b) Volume orders for a limited number of expensive drugs may yield savings of 30% or more.

IMPLEMENTATION:

Government

Provincial governments should make their pharmacy consultants available to organize and encourage hospital administrators to work out details of this proposal in their own hospitals, and others in their region.

Hospitals

Trustees and administrators should examine their drug purchasing methods and initiate a policy of co-operation with others in group purchasing, within a definite timetable.

FINANCIAL INCENTIVES AND ANALYSIS

One of the major factors which can influence rising costs is an adequate incentive plan for hospitals and their employees. Business and industry have found that incentive programs provide a built-in means of stimulating increased production and operating efficiency. In business, the profit motive and the promise of extra profits, which may be shared with employees, lie at the heart of most of these programs. Hospitals, of course, do not operate for profit, but they could achieve greater efficiency if incentive programs were based on sharing the savings in operating costs. These could become as strong an incentive as profit-based industry plans.

Basic standards of performance for most staff positions in hospitals have not been defined, so there exists now little basis on which incentives to hospital workers could be paid. Standards have to be developed.

Industry experience shows that effective productivity rates of 80 to 85% of performance standards are routine without incentives; with incentives, rates of 120 to 130% can be reached and maintained. It follows that incentives should not be paid for performance which is below established norms. These would have to be developed through the use of analytical techniques, but there is no reason why this could not be done in hospitals across Canada.

RECOMMENDATION:

Provincial and federal health authorities should encourage and support incentives to stimulate greater productivity in hospitals at both departmental and staff levels. A portion of the operating savings which are achieved by cost being less than normal acceptable standard costs should be retained

by the hospital. It would be free to use these funds for any purpose which its board might approve.

IMPLEMENTATION:

Government

It will be necessary for federal and some provincial governments to amend their hospital insurance legislation so that a portion of the operating savings could be retained by hospitals either for payment of incentive bonuses to employees and administrative staff, or for other purposes.

Provincial hospital insurance plans should arrange for hospital associations to discuss with knowledgeable people the means for first, setting standards in several pilot hospitals, and then implementing this recommendation. It would involve using existing hospital people who have had experience in work management and might also mean engaging specialists in industrial techniques, either at the provincial plan level or by adding them to hospital staffs.

Hospitals

This recommendation will only be successful if hospital administrators and trustees give it their enthusiastic support. In order to launch a plan for increased productivity, based on production standards and payment of incentives, an educational plan for hospital employees and union officials will be necessary. It might be wise to add to hospital staffs one or more persons, knowledgeable in this subject, to give it their full time and collaborate, not only with department heads but with provincial plan specialists if they are available.

There are a number of common facilities which hospitals could share on a regional basis to provide increased services and at the same time reduce operating

costs. Under the present hospital insurance plan, with hospitals reimbursed for actual costs, they have no financial encouragement to take steps to reduce costs. If incentives were available this would change.

RECOMMENDATION:

Incentives should be provided to encourage joint ownership and operation of such facilities as laundries, laboratories, radiology facilities, computer services, pharmacy and dietary services.

IMPLEMENTATION:

Government

Present legislation must be amended where required so that savings made by participating in joint programs would be retained and used by the hospitals.

Hospitals

Hospitals would have to provide feasibility studies and detailed analyses to demonstrate potential savings over a number of years to justify establishment of joint facilities.

Savings could be made by hospitals if capital funds were provided to replace existing equipment or acquire new equipment which would improve efficiency and reduce labour and/or operating costs. Often such equipment would repay the capital costs in a fairly short period of time - three to seven years. Today, hospitals are short of capital for these purposes.

RECOMMENDATION:

Capital funds should be provided when it can be demonstrated that operating savings will result from the use of new or improved equipment, which could be amortized over three to seven years. An incentive plan should be established so at least part of the savings could be retained by hospitals after the amortization period.

IMPLEMENTATION:

Government

Legislation should be amended so that such capital equipment could be charged to operations on an outright purchase basis when acquired, allowing a portion of the savings to be retained by hospitals for their own purposes after the capital cost had been recovered.

Hospitals

Hospitals would have to produce cost analysis and engineering studies to justify government approval of the initial expenditure for equipment. Should the program fail, hospitals would be expected to reimburse the plan.

Under the hospital insurance plan, costs relative to buildings and building service equipment are not allowable. These capital costs are the responsibility of the hospital except to the extent that there are grants at the time of original construction. Often, however, savings in operating costs would be possible if building service equipment could be replaced by alternate types of equipment or by new equipment, even though the useful service life of the original equipment had not come to an end. For example, a hospital had one main transformer for electric power. In trying to obtain a lower electricity rate, it found that by owning two transformers, the public utility could supply power on a different basis with savings of approximately \$5,000 a year. But because it had to purchase the new transformer from hospital funds, and because all savings from the lower electrical charges would have gone to the hospital insurance plan, the hospital did not make the change. Operating costs have been higher for a number of years than they could have been.

RECOMMENDATION:

Capital expenditures for non-shareable equipment should be provided where it can be proven that the cost will be offset by operating savings. After capital cost amortization, a portion of the savings should be retained by the hospital.

IMPLEMENTATION:

Government

Federal and provincial governments should amend their legislation to achieve the foregoing.

Hospitals

In order to demonstrate the worth of this recommendation, hospitals could very well provide governments with examples and cost studies to show operating cost reductions.

Fees for laboratory or radiology services, whether provided in a public hospital or in private facilities, contain three elements - professional services, overhead and capital investment. The portion of the fee applicable to each should be spelled out so that when the service is rendered, particularly in a hospital, it is possible to see what portion of the fee applies to the professional component and what applies to other costs.

RECOMMENDATION:

The fee charged for each laboratory or radiology service should be allocated on a cost basis of the three components, professional services-overhead-capital investment, whether the service is performed in a public or a private facility.

IMPLEMENTATION:

Government

Because medical fees are arranged by the provincial medical associations, implementation of this recommendation lies primarily with the profession. But

as government health insurance plans now have a major interest in the fee schedules, governments should approach the associations to discuss this recommendation, so that it can become effective.

Medical

The medical association in each province should take the recommendation under consideration and work with government health plans and hospital associations to obtain agreement on the amount that should be shown in future adjustments of medical fee schedules.

Hospitals

The hospital associations in each province should provide cost data so that the information required for the overhead component and the capital investment component in the fee schedule could be established and accepted by the medical profession.

Present cost accounting procedures in hospitals give a distorted view of the actual cost of care because education, research and some interpretive medical services are included in operating costs. Sharing formulas between the federal and provincial governments have perpetuated this practice, because certain educational costs are allowable only if they are charged to the hospital insurance plan through a hospital. Some provinces may receive a larger share of post-secondary education costs under the hospital insurance plan than they do under the separate post-secondary education plan.

Better comparative statistics would result if these various functions were separated for hospital cost accounting and reporting purposes.

This would provide a better basis for determining the amount which hospitals should be paid for patient care, and would identify the other costs related to education, medical components and research.

RECOMMENDATION:

The Canadian Hospital Association should be asked to develop on a uniform basis an extension of their Canadian Hospital Manual, to delineate expenditures made by hospitals on patient care, medical component, education and research. Hospitals should be reimbursed in a way which separates the cost of patient care from the cost of education and medical components.

IMPLEMENTATION:

Government

Federal and provincial governments should arrange with the Canadian Hospital Association to study and prepare a basis for the allocation of costs, and should amend legislation to change the basis of reimbursement.

Hospitals

Provincial hospital associations and individual hospitals should work with the Canadian Hospital Association to develop the cost accounting allocations.

MANPOWER UTILIZATION

Efficient manpower utilization associated with good labour relations is one of the key factors which can have a direct and immediate effect on the cost of hospital services.

The importance of more efficient use of registered nurses should be underlined. They should not be assigned to tasks that could easily be performed by less qualified personnel. Staffing of nursing units should be adjusted to the actual needs of the patients.

RECOMMENDATIONS:

Registered nurses are not required and should not be employed in central sterile supply department, admitting office, pharmacy, etc. Should a hospital continue to employ nurses in these areas, these nurses should be on the staff of that department, not of the nursing service department, and should be paid accordingly. The number of registered nurses in operating rooms should be reduced and operating room technicians employed instead.

All hospitals should be encouraged to adopt at the earliest possible time, a program for assessing patient needs on a day-to-day basis and adjusting staffing patterns in nursing units accordingly.

All immunization procedures generally should be carried out by public health nurses under physician supervision.

The public health nurse should be trained to give routine immunizations, to recognize contraindications and sensitivity reactions and to give the necessary treatment. Instructional materials should be made available to her.

IMPLEMENTATION

Government

Specific directives should be transmitted to hospitals as required in order that the recommendations be put into application.

The immunization recommendations should first be submitted to the medical associations for comment and approval before the directive is transmitted to the appropriate agency.

Hospital

The administrative authority in each hospital or health agency will be responsible for the immediate implementation of the directive. The necessary procedure should be established to measure or evaluate the effect in cost saving of implementation.

PATIENT CARE CLASSIFICATION

The needs of the individual patient, once carefully defined in his best interests, should be met in the most economical manner possible. Some people require full, intensive care but many others need only a relatively small amount of nursing care and supervision.

The capital cost of an acute care hospital bed is often more than \$40,000. The patient in that bed should actually require the range of services the investment provides. Otherwise less expensive levels of care should be used.

Once the patient is admitted to hospital, his condition should be analyzed so that he may be given precisely the level of services and nursing care that he needs. This will lead to a better distribution of the abilities of the staff in treating patients.

To use too much or too little of the resources available is to misuse important investment and operating costs. The needs of patients vary considerably and these needs must be recognized on an individual basis which will often demonstrate that the patient does not in fact need to be in hospital or to be treated by highly specialized nursing and professional staff.

New techniques for determining patient needs have been developed, and so have other levels of institutional care. The right treatment in the right institution by the right staff will mean a more rational and economical use of personnel and facilities.

RECOMMENDATION:

The patient should be cared for at the level which is best suited to his needs and which is most economic. This involves a range of care - acute, chronic,

convalescent and intermediate hospitals, boarding homes, care in the patient's own home, and ambulatory care. All agencies should adopt programs for assessing patient needs on a day-to-day basis and staffing patterns should be adjusted accordingly. A uniform classification of care functions should be developed and used throughout Canada.

IMPLEMENTATION

Government

All facilities should be classified as to the level of care they constitute. Institutions should be required to assess patient needs, and their budgets should be determined so that variations of patient needs among comparable facilities would be provided for. Health resources should be balanced on an overall basis so that acute care beds would not be added when less expensive facilities would suffice for the real need.

Medical

The entire concept of gearing patient need to appropriate facility depends upon the recognition by the physician that his patient will be best served in the institution best suited to his condition, and that admitting the patient to a higher level of care than is really necessary means misusing expensive resources.

Hospitals

After defining a patient's needs, hospitals should organize their personnel to best fulfill those needs, or else recommend that the patient be treated at another level of care. Nursing services should be tailored to the patient and should not continue to be based on routine or tradition (such as taking temperatures three times a day when the patient doesn't need it done). In their planning, hospitals should remember that a bed shortage might better be solved at a level of care other than their own. More acute beds are not always the solution.

The Public

The individual patient and his family must come to realize and accept the fact that significant changes in health care are producing facilities related to specific needs, often rendering invalid the past assumption that admission to a general hospital is the only secure answer to a health problem.

STANDARDS OF PATIENT CARE

Patient care standards are changing. New technology, information, and greater personnel resources have permitted society to tackle new and old problems in different ways. People do not stay in bed after operations as long as they did twenty years ago. Nor are they afraid of surgery as they once were. Society is indebted to the scientists, doctors, nurses, and all the others who contributed to these advances.

Today this knowledge must be applied to make sure that as many individuals as possible benefit. To apply old, outdated standards, or accept new fads which have not been proven, will not really be beneficial.

Standards or guidelines should be established in all areas, but above all, mechanisms must be created so that the best standards of patient care are applied.

RECOMMENDATION:

Guidelines should be created to help determine the criteria for admission, investigation, length of stay, discharge, and the establishment of specialized services for coronary care, burn units, etc., to ensure both the best use of the resource and quality of service.

IMPLEMENTATION:Government

Planners must recognize that specialized services built in many places may mean a lowering of operating standards and a misuse of specialized abilities. Facilities in themselves are not a guarantee of standards. Continuous assessment of operating standards must be maintained.

Medical

The development of professional standards of patient care is a major responsibility and over-utilization as well as under-utilization may be a serious misuse of resources. Standards required for research are necessarily different from those related to day-to-day operation of hospitals and health care activities. It is only through the application of well established guidelines and standards by the profession that proper care standards can be maintained. Recognition by the profession that proliferation of specialized services is no guarantee of standards or adequate services must follow.

Hospitals

Hospitals must recognize that specialized services are a resource of the community and should be developed to meet community needs in such a way as to guarantee high operating standards and most economical use of resources, human and financial. Internal mechanisms for the development of guidelines and standards consistent with high standards of care and effective and efficient use of all community resources and, in particular, their own institution, must be established, with particular reference to utilization and specialized facilities.

Public

patients and their families must understand that having a particular service nearby is no guarantee of high standards or service. Special services often require equipment and staff that must be in constant use to maintain standards. The misuse by either over-utilization or under-utilization of services, or institutions, will not permit the maintenance of operating standards. For the individual the extra travelling time to a high standard quality, centralized facility, can be an investment well rewarded in terms of his own care.

AMBULATORY SERVICES

When a patient is admitted to hospital for diagnosis or treatment the cost is high. When he visits other health facilities for the same things and then goes home after a few hours, a day or at most a night, the cost is a great deal less. Thus very substantial savings can be achieved by organizing health resources to stress both the adequacy and economics of ambulatory care.

The use of hospital out-patient services for diagnosis and minor surgery from which the patient can recuperate at home can slow the demand for acute beds and reduce hospital operating costs. There is a problem, though, when the patient is insured against the cost of staying in hospital, even though he doesn't need the full benefits of the services available, but is not insured against out-patient fees.

RECOMMENDATION:

A full range of out-patient diagnostic and treatment services should be insured in every province.

An organized program of short term care for a day or a night provides a promising alternative to full use of hospital in-patient services. Day care programs for child, geriatric, diabetic and psychiatric patients, rehabilitation purposes, and for diagnosis, have already yielded successful results in some parts of Canada.

The existence of such facilities permits patients to be discharged from hospital earlier than they could be otherwise, and they return less frequently for in-patient care.

RECOMMENDATION:

Impetus should be given to the development of a broad range of ambulatory services, permitting a reduction in the ratio of active treatment beds that a community or region would otherwise require.

IMPLEMENTATION:

Government

Provincial governments should develop this concept as part of their overall health service planning and ensure that ambulatory facilities are integrated with all levels of bed care.

Hospitals

Hospital departments, particularly the laboratory and X-ray facilities, must be prepared to reschedule their activities to provide the personnel and equipment for preadmission workups and diagnostic services.

Rapid urbanization in Canada has revealed an urgent need for unified regional planning of health services closely related to the size and requirements of the community or area involved. Each component of the overall system should be developed, not in competitive isolation, but as an integral part of a balanced whole. This should result in joint use of facilities to avoid duplication, and the development of specific programs only where the volume and scope of need will combine to produce an economic and effective service with high professional standards.

RECOMMENDATION:

First priority should be given to establishing community health centres containing a full range of preventive, diagnostic and curative services - but no beds for overnight care. Such centres may be operated as branches or satellites of established general hospitals.

IMPLEMENTATION:

Government

Provincial governments should examine this new concept intensively and objectively to render effective an integrated approach to the pressing needs of communities for more widely distributed facilities.

Medical

Genuine professional acceptance will be needed to make this idea work, coupled with an understanding that such Centres would, in fact, be well designed to serve general practitioners in areas where the population does not justify a hospital.

Physicians doing post-graduate work in community medicine could make up much of the medical staff in Community Health Centres.

Hospitals

If a hospital assumes responsibility for a Centre, its Board must exercise a "parent" role which will be most successful when properly motivated by full understanding of, and goodwill for, the underlying concept.

Public

Individual patients and their families must be assisted to understand and participate in the development of the Centres, if they are to be accepted and properly used. The public must come to appreciate that many health needs previously considered in terms of hospital use would be more ably served in the Community Centre.

HOME CARE

A wide range of health care services can in fact be brought to the patient in his home far more economically than installing the patient in an expensive hospital bed when his condition is not sufficiently serious to warrant such intensive care.

Without leaving his home the patient can have made available to him physicians' services, nursing care, occupational, speech and physiotherapy, dietary counseling, drugs, appliances, laboratory services, homemaker services, meals on wheels and social workers. Special transportation services can handle periodic visits to other, centralized facilities.

An extension of the above services, used selectively as prescribed by the attending physician, could reduce the pressure on all levels of institutional care by reducing unnecessary admissions, and shortening the stay in hospital. Home care should be available to all community residents in need, not just those recently discharged from hospital, so the programs can be community rather than hospital based.

RECOMMENDATION:

Home care programs should be expanded to become a significant component of the health care system for use when:

- 1) Medically indicated as a form of treatment;
- 2) Treatment cost can be demonstrated to be lower than the same treatment provided in hospital;
- 3) Beds are in short supply and are required for patients who cannot be served by alternative means.

IMPLEMENTATION:

Government

Assisted by the federal government and local health agencies as required, provincial governments should finance expanded home care programs, take the initiative in organizing them as an integral part of the regional health care system, and encourage their use as an alternative to more expensive institutional health care.

Medical

It is vital that the physician recognize, as a matter of practice, home care as a resource analagous to institutional care when deciding upon the treatment for his patient, and that his decision is the key factor in the use of home care services. The physician's participation by home visiting is essential.

Hospitals

Administrators should recognize the advantages to them of home care services and assist in the development of such services, or even initiate them where necessary. The facilities of the hospital should be made available to home care programs to avoid duplication of new services elsewhere in the community. It should be stressed that the home care program need not necessarily be hospital based, but close co-operation is essential.

HEALTH CARE ADMINISTRATION

To combine maximum effectiveness with the most economical operation possible, health care services should be flexible; able to adapt to the conditions and circumstances in local areas and regions. For instance, organizations not otherwise involved in the health field, such as unions, may wish to achieve health care for their members through the clinic approach. Experiments in Canada have already shown that this may involve the capitation or uniform payment per person method as opposed to the traditional fee for service.

RECOMMENDATION:

Government medical care insurance plans should be prepared to experiment with the capitation method of payment, particularly where this is desired.

Patients are often placed in expensive acute treatment hospitals because the physician rightly feels that only in such an institution do the personnel and facilities exist to cope with the conditions which might be discovered.

Medical care insurance plans should be prepared to experiment with the development and coverage of diagnostic and other facilities outside the hospital, to reduce the pressure on these central institutions which are often now used below the capacity of their equipment and the skill of their personnel. This would involve extending the plans to cover such concepts as Community Health Centres and the development of specialized clinics.

RECOMMENDATION:

The level of support offered to the physician outside the hospital should be developed so that he will be encouraged to use such

services where medically appropriate, and where no additional work load for himself or cost to the patient is involved.

IMPLEMENTATION:

Government

Federal and provincial legislation and regulations should be amended where necessary to include supporting services outside hospitals. Governments should explore the development of such services with other health authorities.

Medical

The profession should be included in planning the establishment of outside supporting services and should understand that the economies involved will not affect the level of care available for patients.

The Public

The individual patient and his family must be educated to realize that facilities outside the hospital are to his advantage in both financial and health terms.

FEE SCHEDULES

Physicians' fees constitute a large portion of the overall costs of medical care. Until very recently the tariff committees of medical associations have been handicapped in their approach to this problem, and have been repeatedly subjected to pressure groups within the associations. One of the main difficulties in determining when and how and where revisions in the fee schedules should take place has been the lack of information to determine what fiscal effects changes in current schedules may have on the earnings of a particular type of physician.

It is both logical and rational that periodic revisions in physicians' fee schedules should be made, taking into account changes in the economy, changes in patterns of practice and changes in advancing technology. Information can be made available through insurance carriers regarding the frequency and cost of various service items. If this information is made readily available to the profession, this data can be used to logically and realistically bring about the desired revisions in keeping with the overall objective of increasing productivity and restraining costs.

RECOMMENDATIONS:

Accurate, up-to-date, information on the average net incomes of physicians in full-time practice (general practitioners and all types of specialists) in various locations in each province must be used in order to develop rational fee schedules. This information has not been available in the past. Government-sponsored provincial plans should make available to medical associations full data regarding frequency and costs of medical services and ranges of gross payments to (or on

behalf of) doctors in the various specialties and geographic areas.

Data on gross and net income and expenses of practice should continue to be gathered and analyzed by the Department of National Revenue and the Department of National Health and Welfare and should be adjusted by considering the doctor-population ratio in various specialties and provinces, and also by taking into consideration geographic peculiarities of the province.

Fee schedules should be revised at intervals of about three years in order to keep physicians' net incomes in line with the general economy, and to adjust for changes in patterns of practice and changes in overhead expenses. Before each revision is undertaken, the total percentage change in physicians' net incomes which the new schedule should bring about should be discussed by, and if possible, agreed upon, by the Provincial Medical Association and the insuring agencies. These would be net incomes before the payment of income tax.

Once fee schedules and overall costs of physicians' services have reached an acceptable level, further changes should be based upon agreed economic indices, so that fees and costs move in proportion to the economy of the country or province. Various weightings of the consumer price index and index of average weekly wages and salaries have been suggested, but further study is required to find the most appropriate formula. The effects of the application of any formula must be examined regularly.

IMPLEMENTATION:

Government

The provincial government plans should forward to the medical associations in each province regular and complete data indicating the service experience which they have encountered with regard to the payment of

physicians' claims. Governments, in co-operation with medical associations, should together compile a composite economic index which could be applied to the overall cost of physicians' services as the fee schedules are revised from time to time in each province.

Medical

The medical profession must assume responsibility through the tariff and economic committees of the provincial associations to analyze the service and cost data made available to it and use it appropriately in planning revisions in fee schedules.

To an increasing degree doctors are using out-patient hospital facilities for procedures which are normally carried out in their private offices. Rarely is any charge made to the doctor for these services provided by the hospital even though the fees charged by the doctor to the patient (or his insurance carrier), are the same as would be charged had he used his own office, personnel and supplies.

This practice increases hospital costs because additional personnel, space, equipment and supplies are required to provide the service. Although a minimal service charge may be made by the hospital it is not usually adequate to offset the direct and indirect costs incurred. Where such charges are made and where both medical and hospital insurance is provided by government agencies there is double payment for the office overhead factor in the medical fee.

RECOMMENDATIONS:

Provincial medical fee schedules for procedures normally carried out in the physician's office should be developed on a two-value basis -

- A) when carried out in a private office,
- B) when carried out in hospital facilities.

Realistic fee schedules should be charged by hospitals for ambulatory care. In provinces in which no hospital charge is made to patients for out-patient or emergency services the government payment formula should include a realistic factor to cover these costs.

Each province should develop policies and cost sharing formulas providing for rental payments by doctors for office and other accommodation in hospitals used for the practice of medicine.

IMPLEMENTATION:

Government

Provincial governments should revise the schedule of benefits under medical care plans to provide for a realistic service fee to be paid by the doctor for the use of hospital facilities.

Medical

The medical profession, through its tariff committee, should introduce into its fee schedules a new concept to provide for payment of the professional component of this service while deleting the overhead factor. This approach is currently in use in applying radiological schedules and should be extended to other areas where out-patient and emergency hospital services are being used by physicians.

The Public

Since this would constitute a marked change in the current pattern of use of out-patient hospital facilities by physicians, an intensive program would be required to make the public aware of this change in procedure.

It is becoming increasingly evident that allied health professionals such as public health nurses, social workers, physiotherapists and dietitians can and should be employed to form a health care team which would

relieve physicians of the execution of many routine duties which can just as ably be performed by other, less highly paid, professionals.

RECOMMENDATION:

The medical care plan should cover the services of allied health professionals working under the direction of practicing physicians. Payment for services should be appropriate to the status of the person rendering the services, and to the costs involved.

IMPLEMENTATION:

Government

Provincial governments, in conjunction with the profession charged with enforcing the Provincial Medical Acts, must review the responsibilities by statute to be carried out by physicians only. In some provinces it would be necessary to change the regulations under Medical Acts to permit the legal use of the allied health professionals if they are to be employed to fullest capacity.

Medical

The medical profession must be prepared to accept the role of these health care workers and assist in their training and orientation within the health team.

The Public

The public must be made aware of the fact that the proper use of allied health professionals will provide it with as good a service at a lesser cost.

Everyone studying the costs of health care recognizes that technological advances in diagnostic procedures, and the necessary equipment required to carry out these procedures, are developing at such a rapid rate that a constant review is required in order to determine the methods and levels of remuneration to be applied.

RECOMMENDATION:

Many laboratory procedures can be done in different ways at varying levels of cost. New high-volume and "instant methods" of performing laboratory tests with automated equipment carry a lower cost-per-test than traditional manual methods. Fees charged and payments made should be related to the method used. It should be noted that automated laboratory equipment is expensive and must be funded.

In the rendering of services by a laboratory and in radiology there are three elements to be considered. These are:

- A) the professional components;
- B) the overhead, including salaries of staff, and
- C) the capital investment.

In determining fees for services in this context these three elements should be separately considered. This applies to both public and private establishments.

IMPLEMENTATION:

Government

Government plans must alter their schedule of benefits so that "fees charged and payments made" should be related to the methods used for the tests. Governments must also study the techniques of funding the capital costs of major laboratory and radiological equipment in a more economical manner.

Medical

Medical professions through their tariff committees should be constantly reviewing and revising their fee schedules in the laboratory and X-ray field in order to assign realistic fees for the new high volume and instant methods which are increasingly coming into use.

MASS SCREENING

Mass screening programs are costly because they must cover very large population groups to be economical in detecting abnormal or "positive" results.

Such programs should not be lightly undertaken, stimulated, or supported. In fact, a good deal of skepticism is now associated with screening procedures and they should be viewed with caution. Further investigation is clearly required and should be judiciously supported for demonstration and evaluation purposes rather than as operating programs.

Mass screening refers to the administration of a test or tests to a population, generally from a total community, consisting largely of normal persons or persons without signs or symptoms, for the purpose of identifying the likely presence of a single disease state at an earlier stage in time than is customary. Similarly, multiphasic screening refers to the simultaneous administration of a number of tests for the purpose of identifying the presence of more than one disease state.

RECOMMENDATION:

Mass screening for disease in the undiagnosed state should not receive support from public funds unless such screening is:

- A) selective as to methods used, considering their sensitivity, specificity, cost efficiency and cost effectiveness in terms of meaningful intervention in the natural history of disease;
- B) directed to high risk groups including those which do not customarily seek medical care; and

- C) followed by a diagnosis with a minimum loss to follow-up of positive screenees.

Further evaluation of multiphasic screening should be undertaken to establish the validity of this approach in clinical practice, prior to any mass applications supported by public funds.

IMPLEMENTATION:

Government

Federal and provincial departments of health should give leadership in providing professional and public information concerning discriminating use of screening procedures, and should give financial and other support to operating programs meeting the rigid criteria implied in this recommendation; and to demonstration projects with adequate provision for evaluation of results.

EDUCATION

Several task forces recommended educational programs as the key factor in the long-range improvement of resource allocation and administration in the field of health care. Through such programs, the skills and talents of health, hospital, and nursing administrators could be greatly improved, and the attitudes of physicians and other health professionals could be oriented towards cost savings, and more efficient use of health resources.

In particular, courses for hospital, public health, and nursing service administrators should lay much greater emphasis on modern management techniques, systems, principles, and philosophies. In this way, administrative standards in the health services can be upgraded to make them comparable to management in the business and industrial community.

RECOMMENDATION:

Current degree programs in hospital, health and nursing administration should be improved and updated by emphasizing modern management techniques and principles. The number of basic and continuing educational programs in health administration at universities, community colleges and applied arts and sciences institutes should be increased.

In order to develop a sense of responsibility among physicians in regard to the generating of costs in the course of their practices, it was suggested that undergraduate and postgraduate medical students should be given more training in the economics of health care, should be taught to emphasize clinical rather than mechanical approaches to diagnosing, and should be imbued

with the virtue of discretion and restraint in using diagnostic procedures, ordering drugs and scheduling return visits or hospital admissions.

RECOMMENDATION:

Medical school curricula should include training in the economics of health care, and place greater emphasis on clinical medicine in diagnosing disease, including the requirement that any test ordered be justified on rational grounds.

Several task forces believed that educational programs should be introduced to train special categories of personnel who might take over some of the functions of physicians and dentists, or who might perform more specialized nursing functions in order to relieve practitioners of some of their more routine duties, and to provide for better co-ordinated nursing care for patients.

RECOMMENDATION:

Specialized training programs should be established and financed:

- A) to train on a pilot project basis a class of "practitioner-associates" in a university teaching unit under medical direction,
- B) to train "dental auxiliaries" to assume certain functions now carried by dentists,
- C) to train "clinical specialists" in nursing at graduate and post-basic levels.

IMPLEMENTATION:

Government

Provincial governments should develop centralized educational programs for health service personnel, should increase the number of courses at universities, community colleges and technological institutes for health,

hospital, and nursing administrators, and should ensure that course contents lay heavy emphasis on modern theories and practice of management, in line with provincial and national manpower needs.

They should encourage their schools of public health to provide advanced courses in health services administration to experienced public health personnel.

They should encourage their medical schools to give more emphasis to the economic consequences of different patterns of medical practice. They should make it possible for practitioner-associates, dental auxiliaries and clinical specialists in nursing to be trained and used.

Medical-Dental

Doctors and dentists should welcome practitioner-associates, dental auxiliaries and clinical specialists into their practices in order to relieve them of some of their more routine procedures. Doctors should become more aware of the effects of their prescribing and requisitioning habits on the costs of drugs and diagnostic aids in hospital budgets. Medical teachers should emphasize the importance of restraint in ordering tests in their undergraduate and postgraduate classes.

Hospitals

Hospital Boards should insist on acceptable qualifications in administration when hiring administrators at any level, and should encourage present employees to improve their administrative qualifications. Hospital administrators should encourage their nursing personnel to take specialized training in administration and in clinical nursing. Hospitals should encourage educational programs to provide the clinical aspects of their courses in a hospital setting.

N O T E

All the Recommendations which follow are indexed to their precise location in the originating Task Force Reports. For example, (2-17) means Book 2, Page 17.

RESEARCH RECOMMENDATIONS

UTILIZATION

7. That a survey be undertaken of the actual hospital use of statistics furnished by the various agencies, such as, Hospital Medical Records Institute, Professional Activity Studies, Dominion Bureau of Statistics, Canadian Hospital Association, and the Department of National Health and Welfare. This survey should explore what are the actual needs, which statistics are most used and which least used. As a result of this survey, the practical needs of hospitals for statistics would be more clearly defined. (2-17)
8. That the medical staff develop norms or standards for the use of hospital treatment and diagnostic services. Norms are particularly indicated in the following areas:

Criteria for admission
Criteria for investigation
Criteria for length of stay
Criteria for discharge

Once the norms have been developed by the medical staff, the hospital administration should be given the responsibility for applying them. (2-19)

12. (a) That aspects and problems of present patterns of utilization of hospital services be presented to all undergraduate medical students as a part of the curriculum and that research into these areas by the medical student be encouraged.
- (b) That, as a formal part of the medical student's curriculum, there be teaching and research in the organization and delivery of health care services. (2-26)

OPERATIONAL EFFICIENCY

7. That competent operations analysts, biomedical engineers, and other qualified personnel in data management and applied mathematics be employed to work with analysts to examine health service activities. (2-66)
8. That favourable consideration should be given to any worthwhile applications for applied research funds for a project which makes a serious attempt to conduct a total scheduling systems study. (2-76)
9. That a computer applications advisory group representing the various parties responsible for health care be set up in each province to assess computer proposals and co-ordinate efforts to avoid duplication and ensure best use of available resources. Representatives of the various provincial groups should meet periodically to exchange information and take the necessary steps to keep informed of developments in this field. (2-77)
10. That to encourage hospitals to apply industrial techniques, and where funds are required to initiate and carry out studies to effect operating savings, the funds be provided on an amortized basis with at least a portion of the savings retained by the hospitals. Where no net savings result from the expenditure of funds for studies, the costs would be borne by the hospital. (2-78)
21. That objective standards for nursing care should be established. (2-85)
22. That a method of measuring the quality of nursing care should be developed. (2-86)
23. That criteria for measuring the productivity of individual nursing personnel should be established. (2-86)

24. That job standards for each position in the nursing service department should be clearly outlined. (2-86)
25. That an evaluation of the quality of nursing care and performance of individual personnel should be done at regular intervals. (2-86)
57. That surveys be made in all provinces as to the present insurance coverage in relation to risk in all pertinent areas as well as the premium cost and claim experience. (2-130)
63. (d) To establish, possibly with the assistance of carefully planned computer programs, province-wide accurate survey data of all hospitals for establishing of certain physical criteria as guidelines for budget approval purposes (operational expenses as well as capital expenditures).
- (e) To establish norms for basic physical hospital facilities, major renovations and new construction as well as cost of maintenance and utilities. This would be compared with available comparative industrial engineering data and experience. (2-133)

SALARIES AND WAGES

7. That the nursing components of health care be assessed and reorganized to provide for the better utilization of available personnel as follows:
- (a) by the adoption of current management organization and techniques;
- (b) by the development of methods to improve the utilization of nursing personnel, based on carefully formulated work standards and in-service education. In part, this could be accomplished by development in the inpatient care areas of the health care centre of a system of identifying the specific nursing needs of each patient and,

therefore, the staffing pattern of each nursing unit. The development of nursing-team staffing patterns should be on a minimum base, rather than on a maximum patient-care basis, supplemented by an adequate "float" or "flying squad" pool of full-time and/or part-time staff nurses;

(c) by the development of methods of evaluating the quality of patient care; and

(d) by the development of criteria for measuring productivity and evaluating performance of professional and technological personnel in the health field. (2-150)

9. That the Research and Statistics Directorate of the Department of National Health and Welfare, together with the Department of Labour, undertake an on-going program to compare productivity in hospital with that in other industries. (2-151)
10. That a national committee, composed of experts in nursing, medicine, hospital administration and allied health fields, be established to develop a continuing operational research program to maintain progress in health care organization and management techniques. (2-151)
12. That research funds be made available for a thorough study of the present day roles of the board of trustees and administration in a hospital or other health agency, and that the objective of the study be the development of better defined and more meaningful roles for each in a non-governmental, although government-financed, comprehensive health system. (2-151)
26. That a national committee composed of experts in nursing, medicine, hospital administration and allied health fields be established to:

- (a) devise methods for the development of standards for nursing care;
- (b) develop methods of evaluating the quality of the patient care;
- (c) develop criteria for measuring productivity and evaluating performance of professional and technological personnel in the health field; and
- (d) establish a continuing operational research program to maintain progress in health care organizational and management techniques. (2-157)

30. That the federal and provincial Departments of Labour be requested to undertake a co-ordinated study to identify the factors causing the high turn-over rate of staff in hospitals as compared with similar fields of employment. (2-159)

40. That no further approvals for the development of acute care (active treatment general hospital) facilities be granted until regional studies of comprehensive health care requirements have been carried out and approved by the appropriate provincial authorities, and that approval for future health care facilities, and for major renovation projects, be made contingent on their acceptance and recommendation by regional and provincial health planning councils. (2-162)

4. That active operational research programs be undertaken and financed on a national basis to develop comprehensive health care insurance programs that will provide financial incentives to both patients and physicians to avoid the use of acute care hospital facilities for care that could be provided as well, or better, in less costly facilities. (2-164)

46. That priority be given to the development of continuing studies that will result in the development of design standards that must be incorporated into the basic operational units that are components of all hospitals. (2-166)
47. That operational research studies be undertaken on a national basis to determine if possible the minimum, optimum and maximum size of community general hospitals and extended care facilities. (2-167)
48. That approval of plans for new hospital construction, and of major renovation programs for existing hospitals, be dependent upon the unit design standards that are developed and on the findings of the studies on the optimum size of hospitals. (2-167)

BEDS AND FACILITIES

7. That a method of organized regular medical assessment should be provided for all levels of facility as a basis for movement of patients to the most appropriate level of care. In this connection, no person should be placed in a long-term institution or facility without a careful medical assessment. If assessment indicates a potential for improvement, the patient should be placed under a rehabilitation program. No patient should be placed in an in-resident facility if he can be as well or better cared for on an alternative basis, e.g., ambulatory. (2-279)
8. That special research and demonstration units be established in selected areas to develop new and efficient methods of providing and delivering patient care within the context of the levels of care outlined in Section 2 above. Means of evaluating such programs should be set out at the beginning of their period of operation. (2-279)

27. That a study be carried out across the country by a national research team to investigate factors associated with high and low utilization in the different areas of Canada. Attention should be focused on why there are large numbers of active beds in certain areas and few chronic beds; why there are personal care patients in active beds in many communities across the country; and why ambulatory services are not used more. (2-289)
29. That newer techniques for waiting-list analysis be used to analyze demand and the effect of providing additional beds. (2-290)
30. That as a further refinement of present methods:
- (a) utilization studies be carried out of patients requiring institutional care (patients presently in hospitals and other institutions or known to physicians or agencies, including the assessment of waiting lists).
 - (b) in the light of this information, the availability of facilities be assessed and a construction program based on overcoming present shortages and allowing for expected population growth (by age group) be recommended.
 - (c) that the proportion of patients who could be or could have been handled more appropriately on an ambulatory basis or at home be identified in the course of such studies. (2-290)
2. That the research approach of first assessing the service needs of the ambulant patient and only later determine the bed need be listed against the usual approach of assessing bed needs and then relating service needs and space to the number of beds. (2-291)

46. That provision be made to set up a National Health Facilities Design and Information Centre, either as a federal organization or an independent institute. Some of the functions of such a centre would be:

- to carry out research into design and construction standards;
- to evaluate departmental space requirements;
- to evaluate new construction management and industrialized-systems development;
- to examine the "best buy" balance between capital investment and low operating, maintenance and restoration costs;
- to test new equipment with particular attention to complex biomedical equipment;
- to provide data in a form useful for analysis and forecast.

(2-306)

METHODS OF DELIVERY OF MEDICAL CARE

1. That a Committee on Personal Medical Services reporting and making recommendations to the regular conferences of the federal and provincial Ministers of Health through the Dominion Council of Health be established and continue for at least five years to carry out the following functions:

- (a) continuing evaluation of the delivery of personal medical services and the recommending of indicated research and changes in the medical care delivery system or systems;
- (b) convening of an annual working conference on the delivery of personal medical care with participation by invited experts to exchange information, to discuss methods of research and

to evaluate innovations, thereby providing a channel of communication between individual research workers across Canada and the Committee on Personal Medical Services;

(c) evaluation of systems of delivery of medical care in other countries which might be relevant to the Canadian situation;

(d) receiving and evaluating progress reports and final reports of all research activities related to the delivery of personal medical services which have been carried out by, or with financial support from, the federal government, and

(e) the submission of reports of the activities of the Committee on Personal Medical Services at least twice yearly. (3-21,22)

4. That liaison be established between the Research Development Section of the Department of National Health and Welfare and the Secretariat of the Committee on Personal Medical Services. (3-23)

5. That the Committee on Personal Medical Services be authorized to create a Research Review Section to serve the Committee by advising on the technical merits of research proposals related to methods of delivery of medical care which are submitted for federal financial support. The Chairman of the Research Review Section should be appointed by the Committee on Personal Medical Services and be an ex-officio member of the Committee, if not a member already. (3-23)

6. That federal health grant budgets be adjusted to actively encourage the development of research in methods of delivery of medical services. (3-23)

7. That the federal health grant structure be designed to coordinate the Public Health Research Grant and the National Health Grant in the Field of medical care delivery and that the means of access to these funds be clarified and publicized. (3-25)
8. That grants related to the delivery of medical care be available on the following basis:
 - (a) Research Grants: unsolicited research by Canadian investigators should continue to be funded subject to review of scientific merit and technical competence.
 - (b) Exploratory Grants: unsolicited exploratory grants of up to \$10,000 per year for a minimum of two years should be available to encourage academic departments, health agencies, and hospitals to apply their resources and skills to the solution of health care problems.
 - (c) Negotiated Research Contracts: solicited grants which permit the performance of extramural research pertinent to the needs of government.
 - (d) Demonstration Grants: large grants primarily directed towards the demonstration of changes in the organization and delivery of medical services, and available to a province, institution or group.
 - (e) Program Project Grants: large grants often referred to as "block" grants; their function is to enable an institution to develop a series of related research projects. They should be made available to mature investigators who have demonstrated capacity for sustained productivity or leadership in medical services research, and who have beneath them a group of project directors who are themselves capable of high quality research. Program Project Grants can stimulate

coordinated research planning, the hiring of central staff, and the orderly development of research at specific institutions. These grants are a gamble that capable investigators, in centres with established interest in medical care research, will be productive in generating knowledge which can be applied to changing the organization and delivery of health services. For this reason the basic criteria for Program Project Grants should be that the program,

- (i) must have an opportunity of effecting changes in the delivery of medical care to population groups;
- (ii) must be under the guidance of a senior investigator of proven worth;
- (iii) must have a focus, such as a single major problem or operational area in health services which will be the field for concerted, innovative research over a period of 5 years;
- (iv) must demonstrate an orderly program of research across the period of support;
- (v) must have a potential for training in health services research or administration.

(f) Grants in support of Research Positions in Delivery of Personal Medical Services: financial support for this type of research position should be made available to the Department of Community Medicine or its equivalent at each medical school.

(g) Training Grants for personnel in medical services research, teaching and delivery.

(3-25, 26, 27)

10. That the Department of National Health and Welfare promote and sponsor research pertinent to advancing the quality of emergency and urgent call services and that information collected be disseminated to the provinces. (3-35)
18. That multidisciplinary research be encouraged to delineate the combinations of laboratory or other diagnostic procedures which are effective and practical for health surveillance. (3-45)
28. That promising proposals for more effective employment of allied health personnel in the delivery of medical care be evaluated using well designed demonstration projects. (3-63)
29. That a project be funded under the National Health Grants to train at least a pilot class of "practitioner-associates" in a university teaching unit under medical direction and to evaluate their utilization. (3-63)
30. That an extensive and detailed study of group practices in Canada be made to determine whether or not group practice improves the efficiency and effectiveness of medical care. (3-65)
33. That research and development particularly in respect to automatic clinical data handling is needed and should be encouraged and supported by research grants when indicated. (3-70)
35. That the Canadian Medical Association be requested to formulate guidelines for the rational and practical prescription of drugs. (3-73)
38. That the Health Facilities Design Division of the Department of National Health and Welfare undertake the development of the optimal design for working areas for delivery of medical care. (3-76)

PRICE OF MEDICAL CARE

1. Medical associations and medical educators should conduct studies to determine how many physicians are really needed in Canada, and especially the numbers and proportions required in general practice and the different specialities. While inadequate numbers may imperil standards, too many doctors could result in increased costs. (3-170)
4. That a special study should be made of the various methods used to pay "full-time" and "part-time", teaching staff in the Health Sciences. (3-171)
23. That studies should be conducted to determine whether the total costs of care for certain diseases are less or more expensive when managed by a specialist than when managed by a general practitioner. The studies should compare these relative costs in urban and rural locations and in locations with high and low concentrations of specialists. (3-178)
33. That since Canada could provide an ideal setting for controlled studies in medical care insurance, it is recommended that the federal government encourage the provinces to introduce some variety into their medical plans until one or other method of providing insurance has demonstrated its superiority. (3-181)

COSTS OF PUBLIC HEALTH SERVICES

1. That the leadership role of the federal government in respect to promoting and safeguarding the health of the Canadian people be recognized with particular reference to planning, promulgation of standards, research and education. (3-362)

32. That evaluation of current programs to determine their value be carried out by searching hospital records, for example for incidence of rheumatic fever and readmissions to hospital beds. (3-369)
38. That further research, experimentation and evaluation be conducted in techniques of case-finding, e.g. why some people with similar symptoms do, and some do not, consult their doctor. (3-370)
67. That further analysis of available statistics should be pursued to identify the contributions of accidents to hospital occupancy and costs particularly with respect to motor vehicles and to accidents occurring among the elderly at home. (3-377)
74. That health education activities should be expanded and intensified but subjected to more critical evaluation with respect both to their effectiveness in informing the public and especially in influencing behaviour in the desired direction. (3-379)
93. That further study in the use of physician-associates is required and that such study should take into consideration the relationship between family physician and public health. (3-383)

N O T E

A complete list of all Recommendations follows, identified by Task Force and keyed to Book and Page number.

RECOMMENDATIONS OF TASK FORCE ON UTILIZATION

1. That as a first step toward eventual regional organization of all health services, there be a Regional Hospital Board with executive authority. The Board would be composed of representatives of each hospital: doctors, municipal authorities, the public, and others as appropriate. The Board would decide the role of each hospital, i.e., the services that each hospital would provide, the power to re-locate services, if necessary. It would administer the regional budget. (2-9)
2. (a) That accreditation be mandatory for all hospitals.

(b) That a national, non-government body operate this mandatory program of accreditation, but that hospitals failing to obtain accreditation would be examined in depth by the provincial health authority "who would hold the responsibility" for effective follow-up of these cases.

(c) That, accordingly, the Canadian Council of Hospital Accreditation be asked to prepare a statement as to the financing and resource-personnel required for a mandatory program:-
 - (i) for extension of the present program to all hospitals; and
 - (ii) for increasing the scope of the individual hospital survey according to the Council's own ideas. (2-9,10)
3. (a) That all hospital administrators be licensed and that this license be graded using education and experience as the main yardsticks. All hospitals should be graded as to the type of license its administrator requires.

(b) That this licensing program be the responsibility of a national body. (2-11)

4. That there should be medical representation on the Hospital Board - at least the President of Medical Staff and Chief of Staff. The term of office for each medical member should be for a limited time. (2-13)
5. That a hospital management council be created for hospitals of one hundred beds or more, to ensure integrated action by medical staff, administration and non-medical departments. Representation on this council should include members of the medical staff, administration, nursing and non-medical departments. (2-14)
6. That for all elective admissions to hospital, a history, a description of pertinent physical findings, and a statement of the proposed diagnostic and treatment regime, should all be presented to the hospital prior to the admission of the patient. This should be a mandatory condition of admission for the elective case. Where possible, a note of previous pertinent, investigative results should be given. With regard to genuine emergency admissions, it should be mandatory that such a record be placed on the chart within twelve hours of the admission. The implementation of these proposed mandatory conditions for admission of a patient we see as the responsibility of the hospital administrator. (2-16)
7. That a survey be undertaken of the actual hospital use of statistics furnished by the various agencies, such as, Hospital Medical Records Institute, Professional Activity Studies, Dominion Bureau of Statistics, Canadian Hospital Association, and the Department of National Health and Welfare. This survey should explore what are the actual needs, which statistics are most used and which least used. As a result of this survey, the practical needs of hospitals for statistics would be more clearly defined. (2-17)

8. That the medical staff develop norms or standards for the use of hospital treatment and diagnostic services. Norms are particularly indicated in the following areas:

Criteria for admission
Criteria for investigation
Criteria for length of stay
Criteria for discharge

Once the norms have been developed by the medical staff, the hospital administration should be given the responsibility for applying them. (2-19)

9. (a) That a Utilization Committee be mandatory in hospitals with a medical staff of twenty-five or more;

(b) That a prime mandatory function of the Utilization Committee be to undertake the utilization controls discussed above, namely,

- (i) regulation of practitioner access to diagnostic services;
- (ii) control of new techniques and new procedures;
- (iii) control of informal research; and
- (iv) regular review of routine orders.

(c) That the directors of diagnostic departments concerned be given authority to carry out the policy laid down by the Utilization Committee in respect to the functions described in 9 (b) above. Directors of these diagnostic departments should be co-opted as full members of this committee when their departments' affairs are being considered. (2-21)

10. That in hospitals of over two hundred beds there should be a discharge planning group. The person in charge of this group could be a social service

worker, and in some cases could very well be a nurse or similar qualified person interested in this type of activity. There should be representation from the medical profession among the membership of the discharge planning group, and we would recommend that representation from community health agencies also be invited. (2-23)

11. That emergency facilities and services, particularly in urban areas, should not be distributed between all hospitals in that area. One institution, in some cases more than one, should be designated as the emergency centre for the area. This centralized emergency service would be staffed with highly qualified people with the necessary sophisticated equipment and would be able to offer a truly comprehensive emergency service. (2-24)

12. (a) That aspects and problems of present patterns of utilization of hospital services be presented to all undergraduate medical students as a part of the curriculum and that research into these areas by the medical student be encouraged.

(b) That, as a formal part of the medical student's curriculum, there be teaching and research in the organization and delivery of health care services.

(2-26)

RECOMMENDATIONS OF THE TASK FORCE
ON OPERATIONAL EFFICIENCY

1. That hospitals be encouraged to develop along lines of proven industrial organizational structure where lines of authority to an individual known as president or executive vice-president for the day-to-day control of all operations are clearly defined. (2-60)
2. That appointments to management positions be made by personnel competent to determine required qualifications for position and eligibility of applicants based on applicants' education, past record and basic aptitude as determined by available selection tools and procedures. (2-61)
3. That courses in hospital and health administration should give greater emphasis to management techniques per se. (2-62)
4. That consideration be given to relieve professional department heads (i.e., Radiologists, Pathologists, etc.) of administrative details by development of management assistants. (2-62)
5. That representatives of hospital boards within appropriate regions meet regularly to determine how hospital needs for the area can be resolved in the most effective and efficient manner. This common gain principle will not preclude the planned development of experimental or research units or projects. (2-63)
6. That groups of work study personnel be established in each province to carry out work studies in hospitals and to insure that approved recommendations are implemented. (2-66)
7. That competent operations analysts, biomedical engineers, and other qualified personnel in data management and applied mathematics be employed to

work with analysts to examine health service activities. (2-66)

8. That favourable consideration should be given to any worthwhile applications for applied research funds for a project which makes a serious attempt to conduct a total scheduling systems study. (2-76)
9. That a computer applications advisory group representing the various parties responsible for health care be set up in each province to assess computer proposals and coordinate efforts to avoid duplication and ensure best use of available resources. Representatives of the various provincial groups should meet periodically to exchange information and take the necessary steps to keep informed of developments in this field. (2-77)
10. That to encourage hospitals to apply industrial techniques, and where funds are required to initiate and carry out studies to effect operating savings, the funds be provided on an amortized basis with at least a portion of the savings retained by the hospitals. Where no net savings result from the expenditure of funds for studies, the costs would be borne by the hospital. (2-78)
11. That consideration be given to provide monies for capital expenditures for nonsharable equipment where it can be proven that such expenditures will be offset by operating costs savings. (2-78)
12. That where it can be established that operating costs can feasibly be reduced by purchase of shareable capital equipment, hospitals be allowed to purchase this out of the operational cost savings indicated without any changes in the cost reimbursement formula pertaining to depreciation. (2-78)

13. That each province assess the need to advance the timing of monthly operating payments to reduce the gap between the actual expenditures and their reimbursement. (2-79)
14. That federal legislation be amended to allow for cost-sharing of minimum room and board expenses for semi-ambulatory patients. (2-79)
15. That the provincial authorities set reimbursement rates for those hospitals that can provide such hotel/motel type accommodation, which is a distinct possibility where the operations of hospital-based schools of nursing care presently are being phased out. (2-80)
16. That hospital operating costs and particularly salary ranges be approved and hospitals notified prior to the period under review. For their part, hospitals must submit for approval projected costs for new programs prior to the submission of the annual budget. (2-80)
17. Continuing studies should enable the provincial authorities to maximize the determination of spending priorities by hospitals within overall budget approvals. (2-80)
18. That provinces continue to assess the capital indebtedness position of hospitals and assist those where financial problems inhibit operating efficiency. (2-80)
19. That all hospitals over 150 beds in size employ full-time specialists in personnel services. (2-81)
20. That nursing service administrators should be prepared through educational programs and experience for the position of management of the nursing service department. (2-84)

21. That objective standards for nursing care should be established. (2-85)
22. That a method of measuring the quality of nursing care should be developed. (2-86)
23. That criteria for measuring the productivity of individual nursing personnel should be established. (2-86)
24. That job standards for each position in the nursing service department should be clearly outlined. (2-86)
25. That an evaluation of the quality of nursing care and performance of individual personnel should be done at regular intervals. (2-86)
26. That the nursing service department should be reorganized to reduce the number of categories and the levels of supervisory or administrative personnel. Orderlies should be prepared to the level of registered nursing assistants. The clinical nursing specialist should be introduced. She should be directly responsible to the director of nursing and have a staff relationship to other nursing personnel. She would not be responsible for the administration or management of the unit but she would be responsible for assisting other nursing personnel to assess the patients' needs, plan care, and execute the plan. The addition of this person will improve the quality of patient care (2-86)
27. That determination of the numbers and categories of personnel required to meet the needs of patients be done in a systematic way to ensure the most effective, efficient and economical use of all nursing personnel. (2-86)
28. That the objectives and functions of each department within the hospital should be clearly stated and each department should be responsible for carrying out its functions. (2-89)

29. That the services supporting nursing be reorganized to increase efficiency in the delivery of nursing care to patients and so that the needed supplies and equipment i.e., food, drugs, sterile supplies, linen, etc., are available at the time needed, in the place needed and in the most usable form. (2-89)
30. That registered nurses not be employed in central sterile supply department, admitting office, pharmacy, etc., because they are not required there. Should a hospital continue to employ nurses in these areas, these nurses should be regarded as staff of that department, not of the nursing service department. The number of registered nurses in operating rooms should be reduced and operating room technicians employed. (2-90)
31. That nursing care be planned on the basis of an analysis of the individual patient's needs, not on "routine" or traditional practices. This would tend to eliminate activities done on a ritualistic basis, save nursing care time, and probably lead to more equitable staffing on days and evenings. (2-91)
2. That nursing units not be staffed for the maximum nursing care load. Personnel should be employed as required to take care of an increased nursing care load. (2-91)
3. That admitting policies and procedures be reviewed and changed when advisable to provide for more equitable distribution of patients to nursing units. (2-91)
4. That there should be greater effort to reduce turnover rates by giving general duty nurses an opportunity to use their knowledge and judgment, granting salary increments according to standards of performance, not by years of service only, and better personnel policies. A contract with each

staff member for a minimum period of service should be given consideration. (2-92)

35. That recognition be given to the standby costs associated with diagnostic services. (2-95)
36. That hospitals be charged with the development of a scheduling program so that there be no undue delay in providing the service. (2-95)
37. That equipment be standardized within hospitals and preferably within regions so that servicing can be better achieved. (2-95)
38. That re-examination of the usefulness of routine tests be undertaken to determine their effectiveness. (2-95)
39. That recognition be given to the changing levels of professional expertise required in hospitals and that there be a proper reallocation of duties to other categories. (2-95)
40. That cost effectiveness of each institution's duplicating equipment not being used to its optimum be noted and that coordination between hospitals be undertaken. (2-95)
41. That through group action, hospitals adopt on a regional or provincial basis standard linen material and size to facilitate specifications of manufacture and distribution. The possibility of centralized purchasing and the feasibility of central laundries should also be studied by the group on an area basis. (2-96)
42. That hospitals in metropolitan areas review carefully all developments in the food service field within their area before embarking on large scale changes to their dietary service. (2-101)
43. That hospitals outside metropolitan areas develop a system of consultation by competent dietitians and others. (2-101)

44. That the provincial and federal authorities support fully the task force's recommendation regarding the "Principal purchasing method", as it pertains to "value analysis". (2-118)
45. That provincial authorities urge hospitals to prepare once a year an inventory cost calculation, which should include at least:
- (a) The purchase cost (quantity times unit price).
 - (b) Ordering cost.
 - (c) Inventory cost (average quantity in dollar value carried times 20 - 25%, or any other acceptable percentage).
- This cost calculation may have to be broken down in major supply items and compared to previous experience and budgets, and could become a routine requirement on an annual basis. Furthermore, the hospitals should be urged, as suggested in other recommendations of the task force, to increase, wherever feasible, annual contractual buying with bidding procedure and drop shipments. (2-118)
6. That where lack of working capital is a major reason why certain hospitals are prevented from applying sound inventory management, the circumstances should be investigated immediately by provincial authorities and, where indicated, financial assistance granted. (2-118)
7. That the whole system of "regionalization" (as advocated by various task forces) should incorporate as priority effort in:
- (a) Uniform catalogues for standardized core supply items.
 - (b) Group purchasing in all its variations.
 - (c) Establishing standardized specifications for a computerized system of inventory of supplies. (2-118)

48. That, whereas in analyzing the problem it was found that it is an accepted fact:

"That the operational function of purchasing is basically to provide an adequate supply of materials in line with reasonable requirements for all hospital services at the best possible economy and at an acceptable turnover rate without carrying excess quantities", and

referring to the experience in industry, creative purchasing methods in hospitals should begin with "quality specification", which are to be based on specific studies of the so-called "end-use-cost", or "value analysis".

End-use-cost takes into consideration such factors as price, quality, quantity, standardization, storage and distribution, cost of possession of inventory and ordering, maintenance, effectiveness in practical application, hazards, complexity, cost of disposables versus non-disposables, availability of spare parts, service of suppliers, training time of employees, reaction of patients, doctors, employees, etc. This recommendation is substantiated beyond doubt, and this was discussed with management personnel of a number of progressive companies, by experience in industry where value analysis of supplies as well as equipment is considered vital and at the root of competitive success. (2-119)

49. That group purchasing techniques in the pharmaceutical area be introduced province-wide for core drugs immediately for at least two reasons, namely:

(a) Drug prices would at least be reduced to the level of the hospital which pays the lowest price.

(b) The volume in consolidated purchasing for a limited number of expensive drugs may yield a saving of 30% or more. (2-123)

50. That a further pressure on the price level would be exerted by a contract bidding procedure. The approach in each province may differ. However, it is recommended that it should involve a combination of some of the following organizations: provincial government, provincial commissions, hospital associations, College of Physicians and Surgeons of the province, Association of Pharmacists, The Canadian Society of Hospital Pharmacists, and College of Pharmacists. (2-123)
51. That the so called "unit-dose-packaging-system" be introduced without much delay in at least five hospitals of varying size in strategic locations in Canada. (2-124)
52. That a committee of representatives of these five hospitals be formed with the following terms of reference:
- (a) To study the basic problems of the introduction of this system from an organizational, educational and cost point of view.
 - (b) To visit and examine the experience of hospitals in the United States which have introduced this system and have gained some experience.
 - (c) To prepare a budget (individually for each of the five hospitals), segregated by:
 - (i) Cost of education to precondition and familiarize personnel.
 - (ii) Cost of additional personnel, if any.
 - (iii) Additional cost for packaging in the hospital pharmacy, where necessary.
 - (iv) Additional cost of prepackaged unit-dose drugs.
 - (v) Initial cost of capital equipment.
- (2-125)

53. That inter-provincial mechanism be found to evaluate the aforementioned report and agree to share the cost for the experimental introduction of the "unit-dose-packaging-system" on a federal/provincial basis for an agreed upon limited time. (2-125)
54. That evaluation of the experience of these five hospitals to be made from time to time and pertinent information to be available to all hospitals in Canada. (2-125)
55. Federal/provincial authorities influence drug manufacturers so that through research and technical development they are able to supply at an accelerated pace and at more reasonable cost, solid, liquid, and injectable unit-of-use packaging for the hospitals. (2-126)
56. That a "Drug Information Advisory Board", including representatives of the food and drug directorate, medical profession, hospital authorities, pharmaceutical manufacturers, pharmacists and various federal and provincial health bodies, be established. (2-130)
57. That surveys be made in all provinces as to the present insurance coverage in relation to risk in all pertinent areas as well as the premium cost and claim experience. (2-130)
58. That if feasible a form of self insurance be considered. (2-131)
59. That provincial governments should realize more than in the past their involvement in this matter, since inadequate coverage, especially for fire and liability insurance, may result in serious financial loss which the hospital may not be able to absorb and which, consequently, would result in urgent requests for major financial assistance. (2-131)

60. That guidelines in each province be established as to type of insurance range and diversity, as well as basic minimum specifications in relation to risks. (2-131)
61. That following the recent experience in group buying of hospital insurance, similar endeavours be undertaken throughout Canada with the aim of:
- (a) Providing competent consultant service.
 - (b) Achieving, where possible, uniformity on minimum standards.
 - (c) Reducing cost and still maintaining sound coverage. (2-131)
62. That since the approach in each province again may vary, initial discussions should be held immediately between provincial authorities, hospital associations and any other suitable organization in order to agree on the principle and develop an initial plan of action. This careful and cautious approach is recommended because of:
- (a) The authority and responsibility of hospital boards in this particular field.
 - (b) The uncertainty of the reaction of insurance brokers and insurance carriers or underwriters.
 - (c) The long established personalized service which many hospitals receive from their brokers, and the delicacy in selecting reliable and well reputed insurance carriers. (2-131)
63. That a detailed and profound technical survey should be performed in most parts of Canada on a provincial-wide basis. The purpose and advantages should be:
- (a) To establish a comprehensive technical dossier for each institution.
 - (b) To evaluate the data and provide the individual Hospital Boards with a listing of important findings which may need their immediate attention and action.

(c) To draft, up-date or correct architectural drawings where necessary (in older hospitals often no drawings are available at all).

(d) To establish, possibly with the assistance of carefully planned computer programs, province-wide accurate survey data of all hospitals for establishing of certain physical criteria as guidelines for budget approval purposes (operational expenses as well as capital expenditures).

(e) To establish norms for basic physical hospital facilities, major renovations and new construction as well as cost of maintenance and utilities. This would be compared with available comparative industrial engineering data and experience.

(f) To form the basis for establishing preventive maintenance programs in hospitals individually or collectively.

(2-133)

RECOMMENDATIONS OF THE TASK FORCE
ON SALARIES AND WAGES

1. That each province develop, at the earliest possible time, a comprehensive health system based on the co-ordination of planning, operation and financing through regional health boards which have the authority to provide organizational, management and consultative services to a broad spectrum of health care facilities in a prescribed area. The provincial authority would continue to maintain its overall control and co-ordinating functions through a direct relationship with regional health boards. (2-147)
2. That the regional health board contain representation from:
 - (a) Boards of hospitals and other health facilities in the region
 - (b) Health administrators
 - (c) Civic government
 - (d) General education
 - (e) Medical, nursing, and dental societies
 - (f) Allied health personnel
 - (g) The public at large. (2-148)
- That the specific present and future role of each facility in a regional health system be defined, and that its future development be relevant to its assigned role. (2-148)
- That a comprehensive approach to the health needs of the community be developed, utilizing the hospitals as health care centres to form the focal points of such development. (2-149)
- That this development take place on a regional basis. (2-149)
- That there be upgrading of administrative standards in the health services to make management in this

field comparable to management in the business and industrial community:

- (a) by improvement and updating of present degree-programs in hospital, health and nursing administration;
- (b) by increasing the number of formal basic and continuing educational programs in health administration;
- (c) by devising a regional management system in which a well-trained and experienced administrator with good consultative staff resources could be made responsible for a number of health facilities in a region; and
- (d) by considering the team approach to nursing, medicine and management by setting up a national committee composed of experts in nursing, medicine, hospital administration and allied health fields.

(2-149)

7. That the nursing components of health care be assessed and reorganized to provide for the better utilization of available personnel as follows:

- (a) by the adoption of current management organization and techniques;
- (b) by the development of methods to improve the utilization of nursing personnel, based on carefully formulated work standards and in-service education. In part, this could be accomplished by development in the inpatient care areas of the health care centre of a system of identifying the specific nursing needs of each patient and, therefore, the staffing pattern of each nursing unit. The development of nursing-team staffing patterns should be on a minimum base, rather than on a maximum patient-care basis, supplemented by an adequate "float" or "flying squad" pool of full-time and/or part-time staff nurses;

(c) by the development of methods of evaluating the quality of patient care; and

(d) by the development of criteria for measuring productivity and evaluating performance of professional and technological personnel in the health field. (2-150)

8. That because good management is dependent on good information, there must be a national computerized hospital information centre developed to provide provincial authorities, regional boards, and individual hospitals with the current comparative statistics and indices required by management to develop and maintain good staff productivity. (2-151)
9. That the Research and Statistics Directorate of the Department of National Health and Welfare, together with the Department of Labour, undertake an on-going program to compare productivity in hospital with that in other industries. (2-151)
10. That a national committee, composed of experts in nursing, medicine, hospital administration and allied health fields, be established to develop a continuing operational research program to maintain progress in health care organization and management techniques. (2-151)
11. That all hospitals be encouraged to establish goals, objectives and functional organizations through organized management programs, and that such programs include provision for the close inter-departmental relationships required for effective operation. (2-151)
12. That research funds be made available for a thorough study of the present day roles of the board of trustees and administration in a hospital or other health agency, and that the objective of the study be the development of better defined and more

meaningful roles for each in a non-governmental, although government-financed, comprehensive health system. (2-151)

13. That highly qualified management personnel and labour relations consultants be made available to hospital management on a regional and/or provincial basis. (2-152)
14. That hospital cost accounting procedures that identify specific educational, research, medical and hospital service components be developed, and that the direct costs of medical service, education and research not be included in computing the operating costs of hospitals, or the per diem or per patient-stay rates. (2-152)
15. That the principle of progressive patient care within an individual hospital, a hospital system and a health region be adopted as a basic requirement for the efficient operation of a regional health system. (2-152)
16. That a new national standard hospital accounting system be developed that:
 - (a) identifies the specific functions of a hospital - patient care, education and research;
 - (b) identifies the individual components of each of these functions;
 - (c) separates the cost of medical care, education and research from the computation of the actual operating costs of a hospital. (2-153)
17. That the directors of clinical departments be provided with administrative assistants with the appropriate level of management training, to relieve the directors of management responsibilities involved in the operation of the departments. (2-153)
18. That presently established programs in health service administration and those developed in the future,

at universities, community colleges and institutes of applied arts and sciences, be urged to ensure that course contents include sufficient emphasis on current management philosophies, principles, systems and techniques. (2-154)

19. That provinces be encouraged to develop centralized educational programs for health service personnel on a regional and provincial basis, and that the didactic components of these programs be based in the appropriate education facilities with the hospitals contributing the clinical components of the curricula. (2-155)
20. That central educational programs for the preparation of male and female nursing assistants eligible for registration be developed in provinces in which this has not already been done. (2-155)
21. That priority be given to the development of graduate educational programs for clinical specialists in nursing and for post-basic speciality programs in clinical nursing. (2-156)
22. That cost per patient stay be adopted as one of the measurement standards in acute care facilities by federal and provincial hospital authorities, in place of the presently used per diem costs, and that national standards on patient-stay costs (including minimum median and maximum indices) be developed on the basis of diagnosis and procedure. (2-156)
23. That all hospitals be encouraged to adopt, at the earliest possible time, programs for assessing patient needs on a day-to-day basis and adjusting staffing patterns on nursing units accordingly. (2-157)
24. That nursing hours per patient day not be used as the only standard for assessing the quality of patient care, or in the development of adequate staffing patterns in hospitals. (2-157)

25. That the authority for decisions concerning the provision of "Necessary Nursing Care" for each patient be clearly designated as a nursing responsibility. (2-157)
26. That a national committee composed of experts in nursing, medicine, hospital administration and allied health fields be established to:
- (a) devise methods for the development of standards for nursing care;
 - (b) develop methods of evaluating the quality of the patient care;
 - (c) develop criteria for measuring productivity and evaluating performance of professional and technological personnel in the health field; and
 - (d) establish a continuing operational research program to maintain progress in health care organizational and management techniques. (2-157)
27. That strong consultative personnel services be provided on a provincial and/or regional basis, including statistical and information services that are required for good personnel organization and management in health facilities. (2-158)
28. That collective bargaining systems and dispute settlement procedures in hospitals and other health facilities be improved by providing continuing expert consultative, research and advisory services to both management and unions with the mutual objectives of providing better services to patients and at the same time assuring the rights of social justice to hospital employees. (2-158)
29. That a uniform job classification system be developed and applied for all employees in hospitals and other health services. (2-159)
30. That the federal and provincial Departments of Labour be requested to undertake a co-ordinated

study to identify the factors causing the high turnover rate of staff in hospitals as compared with similar fields of employment. (2-159)

31. That the management of the personnel and industrial relations functions of hospitals be strengthened and improved, and that they be integrated with the general management functions of the hospital as a whole and those of all of its departments and divisions. (2-159)
32. That a current computerized inventory of health manpower be developed by the Federal Department of Manpower and Immigration, and that information from this inventory be made readily available to hospitals and other health agencies to achieve the most effective allocation of competent health personnel. (2-159)
33. That each province be encouraged to develop a health advisory council composed of representatives of provincial hospital, professional and technological associations and of the provincial hospital insurance authority. (2-160)
34. That salaries, stipends and honoraria provided to participants in undergraduate and postgraduate educational programs in the health sciences be paid by an educational authority rather than by hospitals. (2-160)
35. That the annual salary increment programs for health service workers based solely on time in employment, be phased out. (2-160)
36. That criteria for salary administration in the health services be developed on the basis of levels of responsibility and professional or technological proficiency required, that salary scales be developed according to such levels, and that progression within established salary ranges be based on improvement in performance rather than on length of time in service. (2-160)

37. That portable sickness indemnity plans, pension plans and group insurance plans for hospital and other health service employees be developed on a provincial or national basis, on as wide a base as possible, and that they become effective for each employee as soon as he has qualified for a permanent or full-time position. (2-161)
38. That perquisites (board and lodging charges, parking, etc.) should be charged based at least on cost to the hospital or facility. (2-161)
39. That provincial health authorities encourage and support the utilization of incentives to stimulate greater productivity at the hospital, department and staff levels. (2-162)
40. That no further approvals for the development of acute care (active treatment general hospital) facilities be granted until regional studies of comprehensive health care requirements have been carried out and approved by the appropriate provincial authorities, and that approval for future health care facilities, and for major renovation projects, be made contingent on their acceptance and recommendation by regional and provincial health planning councils. (2-162)
41. That a constant review be carried out on the legislation governing professional and technological associations in the health field, to eliminate protective regulations that prevent or discourage the transfer of responsibility for patient care procedures that is required by the rapidly changing patterns of practice in the health service system. (2-162)
42. That provincial medical fee schedules for procedures normally carried out in the physician's office be developed on a two-value basis, i.e.,

- (a) when carried out in the private office;
- (b) when carried out in hospital facilities;

and that realistic fee schedules to be charged by hospitals for ambulatory care be developed. In provinces in which no hospital charge is made to patients for outpatient or emergency services, the government payment formula should include a realistic factor to cover these costs. (2-163)

- 43. That each province develop policies and cost-sharing formulas providing for rental payments by doctors for office and other accommodation in hospitals used for the practice of medicine. (2-163)
- 44. That active operational research programs be undertaken and financed on a national basis to develop comprehensive health care insurance programs that will provide financial incentives to both patients and physicians to avoid the use of acute care hospital facilities for care that could be provided as well, or better, in less costly facilities. (2-164)
- 45. That where there has been an overdevelopment of acute care hospital facilities a reorganization program on a regional basis be undertaken to develop a comprehensive health system based on the progressive patient care approach. (2-165)
- 46. That priority be given to the development of continuing studies that will result in the development of design standards that must be incorporated into the basic operational units that are components of all hospitals. (2-166)
- 47. That operational research studies be undertaken on a national basis to determine if possible the minimum, optimum and maximum size of community general hospitals and extended care facilities. (2-167)

48. That approval of plans for new hospital construction, and of major renovation programs for existing hospitals, be dependent upon the unit design standards that are developed and on the findings of the studies on the optimum size of hospitals.

(2-167)

RECOMMENDATIONS OF THE TASK FORCE
ON BEDS AND FACILITIES

1. That a uniform classification of care functions be used throughout Canada and that the classification set out in Appendix 1 be considered for this purpose. (2-272)
2. That home care be considered as a economic alternative when:
 - (a) it is medically indicated as a form of treatment; and
 - (b) treatment cost can be demonstrated to be lower than the same treatment provided in hospital; and
 - (c) beds are in short supply and are required for patients who cannot be served by alternative means. (2-273)
3. That consideration be given to insuring outpatient diagnostic services in every province whether or not a medical care insurance plan is implemented. (2-274)
4. That impetus be given to the development of a broad range of ambulatory services in order to permit a reduction in the active treatment bed ratios which would otherwise be found necessary. (2-275)
5. That the Federal Hospital Insurance and Diagnostic Services Act be amended as necessary to include inresident care classification levels 1 through 4 as insured services under the Act. (2-278)
6. That, in general, planning for construction should give lower priority to the provision of additional acute inpatient facilities than to upgrading, replacing or remedying the deficit elements in the system whether they be ambulatory care, diagnostic facilities or long-term institutional facilities. (2-278)
7. That a method of organized regular medical assessment should be provided for all levels of facility as a basis for movement of patients to the most appropriate level of care. In this connection, no

person should be placed in a long-term institution or facility without a careful medical assessment. If assessment indicates a potential for improvement, the patient should be placed under a rehabilitation program. No patient should be placed in an in-resident facility if he can be as well or better cared for on an alternative basis, e.g., ambulatory. (2-279)

8. That special research and demonstration units be established in selected areas to develop new and efficient methods of providing and delivering patient care within the context of the levels of care outlined in Section 2 above. Means of evaluating such programs should be set out at the beginning of their period of operation. (2-279)
9. That a federal grant towards construction of all levels of facility be reinstated with provision for its use in provincial and regional programs to achieve a balanced arrangement of facilities. (2-279)
10. That the Federal and Provincial governments enable public facilities to compete with private facilities on even terms through one of the following mechanisms
 - (a) provide the full capital requirements for the provision of outpatient facilities and continue to capture all revenues.
 - (b) allow the public facility to retain the capital component of cost relating to buildings and grounds for outpatient services rendered.
 - (c) exclude outpatient facilities from normal hospital budget mechanisms and allow them to be operated as "ancillary" operations with only net profits considered as offset revenue. (2-280)
11. That administrative arrangements be established which will provide for full coordination of the total health care delivery system at the provincial and

higher levels. This implies arrangements whereby the fields of health, welfare, mental health, hospital plan operation and medical care plan operation can be viewed as elements of a single function and health planning body. In one province, as an example, there are five agencies involved in these functions. (2-283)

12. (a) That each provincial health planning body establish individual regional health planning boards within the province as required which would be responsible for the continuing planning, development and implementation of a regionalized, comprehensive, integrated and balanced health care system of services and facilities within the context of the region's total spectrum of health services and coordinated with the planning of other community, regional, provincial and national health and social agencies.

(b) That the regions be based on the health-service market area to be serviced rather than on municipal, county or other defining boundaries within a provincial jurisdiction. There may be some regions which are interprovincial in scope and the provincial planning bodies involved should cooperate where health service market areas cross provincial boundaries.

(c) That uniform regions be established in each province where feasible for those functions which relate to health in its broadest sense, including health related facilities which are usually the responsibility of other departments, e.g., homes for special care; that departments of the Provincial Government recognize and adopt the established regions for the purposes of planning, organizing and implementing programs; and that voluntary agencies be encouraged to use the same uniform regions.

(d) That regional health planning boards be broadly representative of providers of health care, government and non-governmental agencies and other groups such as consumers who are concerned with health care.

(e) That regional boards be financed by government and be responsible to the Provincial government body responsible for overall provincial health planning as referred to in Recommendation 11. (2-283,284)

13. That regional boards be empowered to employ the necessary staff to carry out their functions. (2-284)
14. That each health-care institution and agency be included in the jurisdiction of a Regional Board. (2-284)
15. That each health care institution and agency be required to develop its plan within the framework of the regional plan. (2-284)
16. (a) That no change in physical facilities or services which significantly affects the nature of any health care institution or service be undertaken without the prior review and approval of the regional board. Major planning decisions involving more than one region would be made by the provincial government health planning body based on recommendation of regional boards.

(b) That the responsibility of regional boards extend not only to approval of new, modernized and expanded facilities but also to conversion to alternative use or closure of facilities. (2-284,285)
17. That no agency at any level of government construct or alter the scope of services of any health care facility without consulting with and securing approval of the regional board; and that in case of dispute, the provincial government health planning body have ultimate authority. (2-285)

18. That steps be taken by the Provincial Government to ensure equitable sharing of the capital costs of health care services throughout the entire region to be benefited. (2-285)
19. (a) That increased attention be directed to the grouping (e.g., by merger or "satellite" arrangements) of hospitals under a single administration, which appears to be an effective means of achieving greater efficiency through shared services and pooled resources. Development of needed "satellite" or branch hospitals in the suburbs by existing large and outstanding hospitals in the central city should be encouraged. (see b below)
- (b) That growing urban and suburban areas consider the establishment of community health service centres before embarking upon building programs for new general hospital beds. Such neighbourhood service centres would be operated as branches or satellites of established general hospitals and would not include beds for overnight care.
- (c) That there should be a strengthening of relationships among hospitals through formal affiliations providing for joint use of expensive services and facilities and transfer of patient and service arrangements. (2-285, 286)
20. That cooperative working relationships among hospitals and other health care facilities and agencies, e.g. nursing homes in the same community or adjacent communities, be encouraged if the needs of the region are to be met in a coordinated and effective way. This can be accomplished through formal affiliations, patient and service transfer arrangements and joint use of facilities. (2-286)
21. That additional incentives be provided to encourage the sharing of ownership and operation of such

facilities as laundries, laboratories, radiology facilities, computer services, pharmacy and dietary services. (2-286)

22. That medical involvement in regional planning be accomplished through such mechanisms as representation on the regional board and establishment of representative and responsible regional medical staff advisory groups to the regional board. (2-286)
23. That the method of granting medical staff privileges in major urban areas be studied to ensure appropriate use of facilities and services. (2-286)
24. That planning for university teaching facilities be reviewed by the regional planning body to ensure that facilities are not being unnecessarily duplicated and that where service needs are already being met, it be necessary, before proceeding with new construction, to demonstrate the impossibility of using existing facilities for teaching purposes. (2-287)
25. That the Royal College of Physicians and Surgeons be asked to re-examine the existing policy of accrediting residency training programs in certain medical specialties on the basis of beds available and to consider substituting a policy based on the volume and type of inpatients and outpatients handled by each service. (2-288)
26. That the federal and provincial governments cooperate in giving careful joint consideration to the need for university medical teaching facilities to ensure that, where highly developed teaching and research facilities exist, these should be used by other medical teaching units wherever practical rather than duplicating the same level across the nation. (2-288)
27. That a study be carried out across the country by a national research team to investigate factors associated with high and low utilization in the

different areas of Canada. Attention should be focused on why there are large numbers of active beds in certain areas and few chronic beds; why there are personal care patients in active beds in many communities across the country; and why ambulatory services are not used more. (2-289)

28. That in applying present detailed methods based on incidence rates of hospitalization, the projected rates be adjusted to make some allowance for the results of utilization studies (e.g. acute hospital beds occupied by persons who require other levels of care). (2-290)
29. That newer techniques for waiting-list analysis be used to analyze demand and the effect of providing additional beds. (2-290)
30. That as a further refinement of present methods:
 - (a) utilization studies be carried out of patients requiring institutional care (patients presently in hospitals and other institutions or known to physicians or agencies, including the assessment of waiting lists).
 - (b) in the light of this information, the availability of facilities be assessed and a construction program based on overcoming present shortages and allowing for expected population growth (by age group) be recommended.
 - (c) that the proportion of patients who could be or could have been handled more appropriately on an ambulatory basis or at home be identified in the course of such studies. (2-290)
31. That in the short run, more stringent limitations be placed on the number of additional new acute beds except where a community can demonstrate either
 - (a) inadequacy of present bed supply to meet existing measurable demand or
 - (b) no slack to meet

present demand projected for predicted population five years ahead. Additional exceptions should also be made for new acute construction that will not expand total bed supply (e.g. replacement of condemned facilities, or extension in one community to serve another where a small hospital is being closed) and for remodeling. In both cases it should be required to demonstrate that the new construction or remodeling will (a) meet an existing service need, (b) improve quality in some way that can be measured or (c) deliver medical care at a lower cost than before. (2-291)

32. That the research approach of first assessing the service needs of the ambulant patient and only later determine the bed need be tested against the usual approach of assessing bed needs and then relating service needs and space to the number of beds. (2-291)

33. That a standing Federal-Provincial Committee be established to examine and make decisions on a cost effective basis regarding proposals submitted from provinces for the introduction of alternative combinations of capital and operating funds for the provision of the type of patient care which comes under joint Federal-Provincial coverage, e.g., the combination of outpost nursing stations, air and road transport, and base hospital facilities as an alternative to a network of small peripheral hospitals. (2-292)

34. That emphasis be placed on early development of ambulatory treatment and community services and that a lesser figure than 0.5 beds per 1000 be used until better information is available for determining the need for inpatient beds. Priority for the addition of new psychiatric beds also depends upon the extent to which existing units (usually in large separate

institutions) need to be replaced or remodeled for program or safety. (2-293)

35. The only occasion for considering a hospital of less than 75 to 100 acute beds is where travel time to a community hospital exceeds one and one-half hours; a small hospital might then be considered for an area with 5,000 - 6,000 population, which might be expected to attract a minimum of two and preferably three physicians. Such a facility would be expected to send out a significant proportion of its cases to a larger centre which could leave a local need of about 30 beds. (2-294)
36. That for small remote communities which do not justify a hospital but where a physician might be expected to reside, provincial and regional authorities give thought to the feasibility of a medical station with diagnostic equipment and space where a bed can be set up for observing a patient or retaining him during bad weather while he awaits transportation to a larger centre. (2-295)
37. That nursing stations or outposts having adequate arrangements for communication with and transportation to a hospital be used to provide service to very small and remote communities. (2-295)
38. That provincial hospital licensing authorities set limitations on the range of service to be provided in small hospitals and medical stations on the basis of patient safety and efficiency and that the medical licensing bodies should restrict physician licenses in such areas to conform to these limitations. (2-296)
39. That burn units be restricted to teaching centres in major metropolitan areas, and that there not be more than one such unit in each metropolitan area; although no finite recommendation is made with reference to a population base for the establishment of a burn unit. (2-298)

40. That before the establishment of a coronary care unit is authorized, the hospital meet the following requirements:
- (a) Staff must be specially trained and experienced in coronary care;
 - (b) Coverage by staff must be adequate;
 - (c) Using the formula outline above, the proposed beds are in agreement with the expected caseload.
 - (d) Hospitals with a workload requiring less than two beds should consider the development of a joint coronary care - intensive care unit. Two beds constitute a full workload for a specially trained nurse on a 24 hour basis. (2-299)
41. That before the establishment of an intensive care unit is authorized, the hospital meet the following requirements:
- (a) Staff must be specially trained and experienced in intensive care;
 - (b) Coverage by staff must be adequate;
 - (c) The proposed intensive care beds have been estimated using a formula of 3 to 4% of the medical and surgical beds as representing the intensive care requirement of the hospital;
 - (d) Hospitals with a workload requiring less than two beds should consider the development of a joint intensive care - coronary care unit. Two beds constitutes a full workload for a specially trained nurse on a 24 hour basis. (2-300)
42. That cardiac surgical facilities should be restricted to the major teaching centres, because it is not likely that a health service market area of under 500,000 population would generate the required minimum workload for one such unit, nor that a service area

of more than 1,000,000 population would necessarily justify the existence of more than one such unit.

(2-301)

43. (a) That therapeutic radioisotope services and in vivo diagnostic services involving patient scanning be limited to hospitals serving major geographic areas and should be provided only when the need for good care makes a unit necessary; and adequately trained staff are available;

(b) That in other hospitals, low level in vitro diagnostic services involving small quantities of radioactive material of low toxicity and simple well-counting devices should be considered when these procedures constitute an economically sound alternative to the more conventional laboratory procedures.

(2-302)

44. That dialysis centres be established in hospitals and metropolitan areas where the caseload can justify an active nephrology service, such dialysis centres to be articulated in all instances with a renal transplantation centre in a major metropolitan area.

(2-305)

45. That the Federal Department of National Health and Welfare jointly with the provinces develop and promote objectives and planning guidelines for program planning and project planning, placing a new emphasis on diversity of function, expansibility, convertibility, and rehabilitation of physical resources.

(2-306)

46. That provision be made to set up a National Health Facilities Design and Information Centre, either as a federal organization or an independent institute. Some of the functions of such a centre would be:

- to carry out research into design and construction standards;
- to evaluate departmental space requirements;
- to evaluate new construction management and industrialized-systems development;

- to examine the "best buy" balance between capital investment and low operating, maintenance and restoration costs;
 - to test new equipment with particular attention to complex biomedical equipment;
 - to provide data in a form useful for analysis and forecast.
- (2-306)

RECOMMENDATIONS OF THE TASK FORCE ON
METHODS OF DELIVERY OF MEDICAL CARE

1. That a Committee on Personal Medical Services reporting and making recommendations to the regular conferences of the federal and provincial Ministers of Health through the Dominion Council of Health be established and continue for at least five years to carry out the following functions:
 - (a) continuing evaluation of the delivery of personal medical services and the recommending of indicated research and changes in the medical care delivery system or systems;
 - (b) convening of an annual working conference on the delivery of personal medical care with participation by invited experts to exchange information, to discuss methods of research and to evaluate innovations, thereby providing a channel of communication between individual research workers across Canada and the Committee on Personal Medical Services;
 - (c) evaluation of systems of delivery of medical care in other countries which might be relevant to the Canadian situation;
 - (d) receiving and evaluating progress reports and final reports of all research activities related to the delivery of personal medical services which have been carried out by, or with financial support from, the federal government, and
 - (e) the submission of reports of the activities of the Committee on Personal Medical Services at least twice yearly. (3-21,22)
2. That the Committee on Personal Medical Services be composed of one member selected from a slate of nominees suggested by each of the following bodies:

- (a) the Department of National Health and Welfare,
- (b) a provincial Department of Health,
- (c) the Canadian Medical Association,
- (d) the Federation of Provincial Medical Licensing Authorities of Canada,
- (e) the Royal College of Physicians and Surgeons of Canada,
- (f) the College of Family Physicians of Canada, and
- (g) the Association of Canadian Medical Colleges.

In addition, there should be a representative from the field of Public Health and a French-speaking representative if not included already, and, in accordance with Recommendation 5, the Chairman of the Research Review Section. (3-22,23)

- 3. That an adequate Secretariat be established within the Department of National Health and Welfare to serve the Committee on Personal Medical Services. (3-23)
- 4. That liaison be established between the Research Development Section of the Department of National Health and Welfare and the Secretariat of the Committee on Personal Medical Services. (3-23)
- 5. That the Committee on Personal Medical Services be authorized to create a Research Review Section to serve the Committee by advising on the technical merits of research proposals related to methods of delivery of medical care which are submitted for federal financial support. The Chairman of the Research Review Section should be appointed by the Committee on Personal Medical Services and be an ex-officio member of the Committee, if not a member already. (3-23)

6. That federal health grant budgets be adjusted to actively encourage the development of research in methods of delivery of medical services. (3-23)
7. That the federal health grant structure be designed to coordinate the Public Health Research Grant and the National Health Grant in the Field of medical care delivery and that the means of access to these funds be clarified and publicized. (3-25)
8. That grants related to the delivery of medical care be available on the following basis:
 - (a) Research Grants: unsolicited research by Canadian investigators should continue to be funded subject to review of scientific merit and technical competence.
 - (b) Exploratory Grants: unsolicited exploratory grants of up to \$10,000 per year for a minimum of two years should be available to encourage academic departments, health agencies, and hospitals to apply their resources and skills to the solution of health care problems.
 - (c) Negotiated Research Contracts: solicited grants which permit the performance of extramural research pertinent to the needs of government.
 - (d) Demonstration Grants: large grants primarily directed towards the demonstration of changes in the organization and delivery of medical services, and available to a province, institution or group.
 - (e) Program Project Grants: large grants often referred to as "block" grants; their function is to enable an institution to develop a series of related research projects. They should be made available to mature investigators who have a demonstrated capacity for sustained productivity or leadership in medical services research, and who have beneath them a group of project directors who are themselves capable of

high quality research. Program Project Grants can stimulate coordinated research planning, the hiring of central staff, and the orderly development of research at specific institutions. These grants are a gamble that capable investigators, in centres with established interest in medical care research, will be productive in generating knowledge which can be applied to changing the organization and delivery of health services. For this reason the basic criteria for Program Project Grants should be that the program

- (i) must have an opportunity of effecting changes in the delivery of medical care to population groups;
- (ii) must be under the guidance of a senior investigator of proven worth;
- (iii) must have a focus, such as a single major problem or operational area in health services which will be the field for concerted, innovative research over a period of 5 years;
- (iv) must demonstrate an orderly program of research across the period of support;
- (v) must have a potential for training in health services research or administration.

(f) Grants in support of Research Positions in Delivery of Personal Medical Services: financial support for this type of research position should be made available to the Department of Community Medicine or its equivalent at each medical school.

(g) Training Grants for personnel in medical services research, teaching and delivery.

(3-25, 26, 27)

9. That the Canadian Medical Association be invited to define the desirable basic standards of emergency and urgent call services which should be available for all Canadians and make appropriate recommendations to the Dominion Council of Health. (3-35)
10. That the Department of National Health and Welfare promote and sponsor research pertinent to advancing the quality of emergency and urgent call services and that information collected be disseminated to the provinces. (3-35)
11. That provincial governments foster, in collaboration with the provincial divisions of the Canadian Medical Association, the development of the regional organization of emergency and urgent call services to fill any gaps in the overall system and supply the components required to ensure progressive patient care, including optimal use of Emergency Measure Organization services. (3-35)
12. That there be adopted on a country-wide basis a unique telephone number (e.g., "911") for emergency and urgent calls. (3-35)
13. That provincial governments in consultation with appropriate organizations, work towards licensing standards for personnel manning ambulances, communications equipment, receiving centres and other emergency facilities. (3-36)
14. That provincial governments, in consultation with appropriate organizations, develop acceptable standards for equipment and facilities for emergency communications, transportation, resuscitation, receiving and treating of emergency cases. (3-36)
15. That mass screening for disease in the undiagnosed state should not receive support from public funds unless such screening is:

(a) selective as to methods used, considering their sensitivity, specificity, cost-efficiency and cost-effectiveness in terms of meaningful intervention in the natural history of disease,

(b) directed to high risk groups, including those which do not customarily seek medical care, and

(c) followed by a diagnosis with a minimum loss to follow-up of positive screenees. (3-44)

16. That further evaluation of multiphasic screening should be undertaken to establish the validity of this approach in clinical practice, prior to any mass applications supported by public funds. (3-44)
17. That a "diagnostic enquiry" carried out by a physician including indicated tests performed in adequate facilities, should be recognized as "medically required services" under the terms of the Medical Care Program; and, further, that a patient-requested "check-up" in the course of which no disease is found should be similarly recognized for payment, but not more often than once annually. Benefit schedules should recognize that not all complaints and investigations lead to a specific diagnosis. Unless the requirement to make a diagnosis of "disease" is removed no valid statistical information on the prevalence and frequency of such examinations will be obtained. (3-45)
18. That multidisciplinary research be encouraged to delineate the combinations of laboratory or other diagnostic procedures which are effective and practical for health surveillance. (3-45)
19. That the necessary expansion of facilities and teaching staff be carried out for the training of physicians at a rate which will diminish our dependence on the immigration of physicians. (3-48)

20. That maximum use of facilities be made by providing that undergraduate training facilities be operated on a year-round basis, accepting that this will require a larger staff of teachers and additional financial assistance to students due to loss of vacation earnings. (3-48)
21. That the Association of Canadian Medical Colleges, The Canadian Association of Medical Students and Interns, The Royal College of Physicians and Surgeons of Canada, College of Physicians and Surgeons of the Province of Quebec, The College of Family Physicians of Canada and other such bodies capable of influencing the orientation of physicians-in-training, be encouraged to collaborate in efforts to the end that the numbers and types of general physicians and specialists trained in Canada may bear a close relation to anticipated needs. (3-50)
22. That development and expansion of general practice departments in hospitals and general practice teaching units in universities and teaching hospitals be encouraged. (3-51)
23. That the Royal College of Physicians and Surgeons of Canada and College of Physicians and Surgeons of Quebec give further consideration to making one year of general or primary contact practice a prerequisite for acceptance into approved specialty training programs. (3-51)
24. That physicians-in-training should be taught how to practice clinical medicine as well as how to probe disease processes. They should also be imbued with the virtues of discretion and restraint in employment of diagnostic procedures, in ordering drugs and in scheduling return visits or hospital admissions - not only out of consideration for dollar costs but also for the dislocation of families resulting from the logistics involved. Clinical teachers should

insist that interns and residents can justify on rational grounds any test they order. This would help to develop a sense of responsibility in regard to the generating of costs and not only in their current practice but, more importantly, in their subsequent habits of practice. (3-52)

25. That part-time clinical teachers be considered essential in undergraduate and postgraduate medical training. (3-53)
26. That interns and residents should serve in ambulatory patient care facilities as part of their training. (3-53)
27. It is recommended that undergraduate and postgraduate medical teaching place even greater emphasis on clinical approaches to diagnosis (as opposed to undue reliance on the use of mechanical aids and tests) and also stress the resolution of as many presenting problems as feasible at the primary contact level. (3-54)
28. That promising proposals for more effective employment of allied health personnel in the delivery of medical care be evaluated using well designed demonstration projects. (3-63)
29. That a project be funded under the National Health Grants to train at least a pilot class of "practitioner associates" in a university teaching unit under medical direction and to evaluate their utilization. (3-63)
30. That an extensive and detailed study of group practices in Canada be made to determine whether or not group practice improves the efficiency and effectiveness of medical care. (3-65)
31. That a unique number be assigned to every Canadian regardless of age. (3-67)
32. That consideration be given to designing and making available to each Canadian a wallet-size plastic

identity card (embossed with name, the unique number, sex, date of birth) which could serve as a printing plate for imprinting medical and related documents e.g., medical care insurance claim cards. (3-67,68)

33. That research and development particularly in respect to automatic clinical data handling is needed and should be encouraged and supported by research grants when indicated. (3-70)
34. That a "clearing house" be organized to stimulate and co-ordinate the efforts of persons from various clinical disciplines working in the field of automated clinical data handling, and that periodic meetings be arranged for exchange of ideas and for direction of activities which would accelerate developments. (3-70,71)
35. That the Canadian Medical Association be requested to formulate guidelines for the rational and practical prescription of drugs. (3-73)
36. That drugs should be licenced and approved on the basis of effectiveness as well as purity and safety. (3-73)
37. That the variety of formulations and sizes of drug products approved for sale be limited to those for which there is demonstrated need. (3-73)
38. That the Health Facilities Design Division of the Department of National Health and Welfare undertake the development of the optimal design for working areas for delivery of medical care. (3-76)
39. That a "clearing house" be developed to effect improvements and increased uniformity in design of requisitions, report forms, data summary sheets and clinical records generally, and that hospitals, clinics and other medical care facilities be encouraged to utilize such forms preferentially when feasible. (3-78)

40. That governmental authorities in each province avoid making further demands on physicians for more documentation unless shown to yield improved medical care. (3-78)
41. That a Canadian agency be requested to take the initiative in exploring the feasibility of developing a uniform set of abbreviations and symbols which could form the basis for a system of "medical shorthand". (3-79)

RECOMMENDATIONS OF THE TASK FORCE
ON PRICE OF MEDICAL CARE

1. Medical associations and medical educators should conduct studies to determine how many physicians are really needed in Canada, and especially the numbers and proportions required in general practice and the different specialties. While inadequate numbers may imperil standards, too many doctors could result in increased costs. (3-170)
2. That full-time clinical teachers should properly charge fees for their work as consultants, but should be under no financial pressure to seek practice. (3-170)
3. That the teaching, research and administrative activities of part-time teachers should be financed by the universities and hospitals, because those teachers play a most important role in educating students of Health Sciences.

The task force is not in favour of staffing arrangements consisting entirely of "full-time" teachers, because the practising physician, dentist and nurse are required to engender a suitable atmosphere of realism. These individuals will be primarily oriented to patient care, and will derive their income primarily from patient care. (3-170,171)

4. That a special study should be made of the various methods used to pay "full-time" and "part-time", teaching staff in the Health Sciences. (3-171)
5. That whereas some students with the potential to become good doctors are being deterred from studying medicine by financial considerations, and to encourage young people to enter a career in medicine, medical students should receive the same grants from government as other comparable students taking higher

degrees. These grants could be made in the form of scholarships or loans. (3-171)

6. That medical school and other health science curricula should include some training in the economics of health care, aimed at encouraging in physicians and others a sense of responsibility for the costs of medical and hospital care. Such teaching should ideally be given by the student's own clinical teachers at the same time as clinical instruction. (3-171)

7. That physicians' incomes should compensate for the cost of their training. The net cost to the individual of training as a general practitioner is estimated at \$26,000, as a specialist \$80,000. There is an additional cost borne by the community for training a physician of at least \$45,000. (3-171,172)

8. That physicians' annual incomes should be adequate to compensate for their relatively short working life. For example, cardiac surgeons and neurosurgeons seldom can work to full capacity for more than 25 years. The exigencies of all forms of modern medical practice do not allow most physicians to practice full-time for longer than 35 years. They should earn enough during this period to enjoy comfortable retirement when their capacity for work has diminished. (3-172)

9. That because in general, the value to society of equally well-trained and hardworking doctors in the different branches of medical practice is similar, the average, net, life-time earnings (after income tax) of doctors in general practice and the various specialties should also be similar.

However, because of differing length of average working life, annual incomes may differ significantly. (It is recognized also that emergency work,

irregular hours, and unpredictable working schedules, etc., are more frequent in some branches of medicine than in others, and merit greater reward.) (3-172)

10. That whereas Canada is in competition for physicians with the United States where earnings have tended to be higher, and that whereas certain provinces, such as Saskatchewan, New Brunswick and Newfoundland, have difficulty in attracting physicians, remuneration to physicians must aim to compensate for these factors, if good medical care is to be available throughout Canada. (3-173)

11. That remuneration to physicians must aim to encourage optimum proportions of general practitioners and all kinds of specialists in Canada as a whole. (3-173)

12. That a fair remuneration to physicians should be based on their professional net income before taxes. The physician in private practice does not have the fringe benefits of the employed person such as holidays with pay, group pension plans provided totally or in part at employer's expense, sickness and disability pay, and possibly other benefits.

At the present time, about a quarter of all Canadian physicians are paid by salary for most of their work. Only a minority of those paid by salary are engaged in rendering personal medical services. Salaries for doctors are a suitable form of remuneration only when their work-volume is predictable. Salaries are not appropriate for competitive private practice in Canada. (3-173)

13. That medical care insurance plans in Canada should be prepared to experiment with capitation payment to clinics who prefer this method of remuneration. (3-174)

14. That attempts to introduce uniform preambles, nomenclature and format to the various schedules, at the same time as simplifying them, should be renewed. Furthermore, an alternative fee-for-service system, not involving use of a schedule (such as DIFAM), should be given a broad field-trial. (3-174)

15. That accurate up-to-date information on the average net incomes of physicians in full-time practice (general practitioners and all types of specialists) in various locations in each province must be used in order to develop rational fee schedules. This information has not been available in the past.

Government-sponsored provincial plans should make available to medical associations full data regarding frequency and costs of medical services and ranges of gross payments to (or on behalf of) doctors in the various specialties and geographic areas. Data on gross and net income and expenses of practice should continue to be gathered by the Department of Health and Welfare and the Department of National Revenue and should be adjusted by considering the doctor-population ratio in various specialties and provinces, and also by taking into account geographic peculiarities of the province. (3-174,175)

16. That special bonuses should be paid in order to attract physicians to less attractive locations. (3-175)

17. That fee schedules should be revised at intervals of about three years in order to keep physicians' net incomes in line with the general economy and also to adjust for changes in patterns of practice and increases in overhead expenses. Before each revision is undertaken, the total percentage change in physicians' net incomes (before the payment of income tax) which the new schedule should bring about should be discussed, and if possible agreed

upon, by the provincial medical association and the insuring agencies. (3-175)

18. That once fee schedules and overall costs of physicians' services have reached an acceptable level, further changes should be based upon agreed economic indices, so that fees and costs move in proportion to the economy of the country or province. Various weightings of the Consumer Price Index and the Index of Average Weekly Wages and Salaries have been suggested, but further study is required to find the most appropriate formula. The effects of the application of any formula must be examined regularly. (3-176)
19. That within the agreed change in total fees, the allotment of individual changes to fee items and assessment rules should remain the responsibility of the medical associations. They should use statistical data supplied by the insurance plans in order to bring about desired average net income adjustments in various specialties, remembering that the incomes are influenced both by increases to individual items in the schedule and by changes in utilization of services. The adjustments should take into consideration the physician's training period, working life, practice costs and potential, and aim at keeping a desirable distribution of general practitioners and specialists in the province. (3-176)
20. That the right of physicians to charge more than an insurance plan's schedule of benefits should be retained. However, if the doctor is prepared to accept direct payment from the plan, he should accept the plan's payment as payment in full except when he has informed the patient before rendering the service that there will be an additional amount for the patient to pay. (3-177)

21. That physicians' payments may be discounted to a previously agreed percentage of the fee schedule, but a proration of payments which varies from time to time, depending on the volume of services rendered and the funds available, is highly undesirable. (3-177)
22. That public medical care insurance plans should aim not to insure luxury care or unnecessary services. All public plans should have medical review committees which include practising physicians to consider these matters and to make appropriate recommendations to the plan. (3-177)
23. That studies should be conducted to determine whether the total costs of care for certain diseases are less or more expensive when managed by a specialist than when managed by a general practitioner. The studies should compare these relative costs in urban and rural locations and in locations with high and low concentrations of specialists. (3-178)
24. That medical care insurance plans should not insure experimental surgical procedures, such as cardiac transplantation, nor pay for mass procedures such as multiphasic screening until their value has been proven. Investigation of such new procedures should be financial from specially allotted research funds, prior to their general adoption or rejection. (3-178)
25. That medical care insurance plans should cover the services of allied medical personnel working under the direction of practising physicians, such as public health nurses, social workers, physiotherapist and dietitians. Accounts for their services should be appropriate to the status of the person rendering them if a fee-for-service method of payment is used. However, payment by salary may be more suitable under most circumstances. (3-178)

26. That fees charged and payments made for laboratory procedures should be related to the method used. It should be noted that automated laboratory equipment is expensive and its cost must be met from the fees and payments. (3-179)
27. That all radiological facilities and laboratories, to be eligible for payment except for the simpler procedures, should be subject to inspection and approval. This function should be carried out by the Provincial College of Physicians and Surgeons or other appropriate body. The fact that a laboratory is owned or operated by a physician or located in a hospital or public health unit is not a sufficient guarantee of quality. (3-179)
28. That when a patient is to be admitted to hospital for elective treatment, the necessary investigations should be carried out prior to admission and not be repeated unnecessarily. The facilities of clinic and group practices in particular may lend themselves to satisfactory performance of such investigations. (3-179)
29. That in provinces where the government operates both medical and hospital insurance plans, there should be no competition between them to save costs for one at the expense of the other plan. These agencies should cooperate to the full. (3-179,180)
30. That patients be notified of sums paid directly to physicians by insurance plans because this is thought to have some effect in controlling abuse and unnecessary utilization. For the plan to send its payments to the patient, leaving the patient to pay his physician, may constitute a further control. The latter method is, however, administratively expensive and not always satisfactory to the physician. (3-180)
31. That medical care plans should appoint medical review committees, manned by practising physicians,

to initiate and continue studies of patterns of practice and utilization. Excessive use of laboratories and other diagnostic services should be included in these studies. (3-181)

32. If there is evidence that certain physicians or certain members of the public are guilty of overuse or abuse, the services should be paid for by the plan at a lower rate. This is better than for the plan to cut all payments indiscriminately through the introduction of general patient participation. It is also better than for the plan to refuse to accept a reasonable increase in a fee schedule because of increased costs through excessive utilization. Strict control of wasted funds means that the physician who is honestly concerned about costs still gets paid in full, and the patient who does not abuse his insurance still gets comprehensive coverage. (3-181)

33. That since Canada could provide an ideal setting for controlled studies in medical care insurance, it is recommended that the federal government encourage the provinces to introduce some variety into their medical plans until one or other method of providing insurance has demonstrated its superiority. (3-181)

34. The Task Force on the Price of Medical Care should continue to meet, if necessary, at intervals after the presentation of this report. Specific topics may be allocated to it. An early one might be discussion of physician training with the Association of Canadian Medical Colleges and the College of Family Practice in order to bring about a better distribution of physicians of all types throughout Canada, and a better understanding of the economics of medicine. A study on the methods of payment for teaching staff might be included. (3-181,182)

RECOMMENDATIONS OF THE TASK FORCE ON COSTS
OF PUBLIC HEALTH SERVICES

1. That the leadership role of the federal government in respect to promoting and safeguarding the health of the Canadian people be recognized with particular reference to planning, promulgation of standards, research and education. (3-362)
2. That operational responsibility be accepted by the provincial public health departments for program development; for the implementation of standards; and for recruitment and employment of at least senior, if not all, (local) health unit personnel. (3-362)
3. That to effect program development and the setting of standards, a cost-sharing arrangement be arrived at with the local area on an approved program basis within a net shareable budget. (3-362)
4. That depending upon population density, the optimum population for a health unit outside metropolitan areas lies between 75,000 and 150,000. Within metropolitan areas there should be established one overall health department for policy and planning but the delivery of public health services should be effected by a health unit organization based on districts. (3-363)
5. That regionalization of health services be encouraged for research and planning functions, to improve communication between departments and agencies and to foster the effective coordination of health activities within the region. It would be expected that selected operational responsibilities would be delegated to the regional level. (3-363)
6. That to effect cost savings, public provision be made for levels of community care alternate to the acute hospital. (3-363)

7. That the patient be cared for at an appropriate level (acute; chronic; convalescent; intermediate; boarding home; home care; ambulatory care) i.e. the level suited to his condition and which is most economic. (3-364)
8. That the level of support offered to the physician outside the hospital be such that he be encouraged to use levels other than the acute hospital and be enabled to do so without creating either an additional workload for himself or an additional cost to his patient. (3-364)
9. That the patient who occupies other than an acute care bed should not be faced with an increased personal cost. (3-364)
10. That the alternatives to acute care provide an effective means of reducing or limiting the number of acute care beds required. (3-364)
11. That expansion of home care programs be encouraged. (It is recognized that when the number of acute beds is limited home care programs will prove particularly useful and valuable and their utilization will be facilitated.) (3-365)
12. That the services to be offered by home care programs should include:
 - physician care; nursing; physiotherapy; occupational therapy; speech therapy; dietary counselling.
 - certain drugs, appliances and laboratory services.
 - home-maker and housekeeper services.
 - ancillary services as required to include transportation, meals-on-wheels, social work, etc. (3-365)
13. That the provision of home care programs be recognized as a responsibility of the public health agency and coordination of services including hospital liaison as a responsibility of agency staff; and that these programs be community based so that

all residents of the area may be served, not just those discharged from hospital, and so that the broadest possible range of services and agencies may be coordinated within the community. (3-365)

14. That voluntary health agencies be "phased in" to give service as part of the overall plan for home care. (3-365)
15. That the service should be available 24 hours a day for emergency and acute situations, but that otherwise normal working hours, to include weekends, be maintained. (3-365)
16. That all services to be included should be prescribed by the attending physician. (3-366)
17. That special consideration should be given to looking after sick children at home. (3-366)
18. That personnel be utilized at the level for which they are trained so that more effective and economic care is obtained. This will involve changes in present role and functions and greater use of auxiliaries, paramedical staff, allied health workers, and clerical workers. (3-366)
19. That legal barriers be removed to allow acceptance of appropriate changes in responsibility among all health personnel. (3-367)
20. That adequate salary scales be developed to ensure competence and that health administrators will have to look ahead and build in rising salary and wage rates. (3-367)
21. That university educational programs in public health be strengthened through increased financial support to enable them to meet expanding needs. (3-367)
22. That there be more stress in these programs on training key members of the public health team together in joint classes and seminars. (3-367)

23. That future health administrators receive further orientation in the theory and practice of new management techniques. (3-367)
24. That supervised field experience be an integral part of education in public health. (3-367)
25. That to the extent courses in public health must be lengthened, programs of financial assistance such as bursaries be revised appropriately. (3-368)
26. That advanced courses in health services administration be made available by the schools of public health to experienced public health personnel who have shown promise of administrative competence and qualities of leadership. (3-368)
27. That communicable disease control programs be expanded and extended, particularly through aggressive planning and operation of immunization activities. (3-368)
28. That guidelines be prepared and revised as indicated so that medical health officers will be aware of what might be considered an adequate level of immunization and that immunization procedures be standardized within each province at least. That consideration be given to reducing the number of booster shots, particularly for the school-age child, and that possibility of utilizing a smaller dosage of vaccine than that recommended by the manufacturers be explored. (3-368)
29. That since immunization procedures can be carried out more economically and efficiently by public health agencies than by practising physicians, the agency approach be emphasized. (3-368)
30. That all immunization procedures generally be carried out by the public health nurses under physician supervision, in the interests of reducing costs of medical care and of improving record keeping.

Expansion of this program will have long-term beneficial effects maintaining costs while the change to standardization and use of public health nurses exclusively, can have an immediate effect in reducing costs. (3-368,369)

31. That the public health nurse be trained to give routine immunizations and that she be knowledgeable as to contra-indications and any sensitivity reactions that might occur and trained in giving the necessary treatment. Written guidelines and the necessary material for emergency treatment should be made available to her. (3-369)
32. That evaluation of current programs to determine their value be carried out by searching hospital records, for example for incidence of rheumatic fever and readmissions to hospital beds. (3-369)
33. That consideration be given to the central purchasing of vaccine and other equipment. (3-369)
34. That although it is agreed that effective control must be maintained in the tuberculosis control program, rigid evaluation be carried out to ensure that time and monies presently being expended in tuberculosis control are not excessive. This should include time spent by public health nursing staff in the field. (3-369)
35. That consideration be given to merging remaining tuberculosis control activities with other communicable disease control activities (for example venereal disease control programs) within individual health departments. (3-369)
36. That family physicians be given ready access to diagnostic facilities, e.g. the use of X-rays as a service to patients referred by their family physician is a more effective utilization of X-rays than in mass screening of the general population.(3-370)

37. That the public be educated about the symptomatology of conditions that can be alleviated and are thought to be significantly under-reported to doctors. (3-370)
38. That further research, experimentation and evaluation be conducted in techniques of case-finding, e.g. why some people with similar symptoms do, and some do not, consult their doctor. (3-370)
39. That screening programs be considered in the light not only of their potential for identifying the condition but also the effectiveness of current treatment methods and the cost/benefit in relation to time/personnel. (3-371)
40. That screening programs must be applied on the basis of age groups and groups "at risk" with special emphasis being put on younger age groups. (3-371)
41. That since the value of certain multiphasic screening programs, for example glaucoma and hypertension, have not yet been proven and in some instances the absence of available treatment does not justify the program, intensive study with respect to follow-up results should be carried out. Until this has been done, these programs are not recommended for general implementation. (3-371)
42. That the use of mass X-ray be considered in relation to the law of diminishing returns in terms of cost/benefit. (To find one case of infectious tuberculosis using mass X-rays in one province in Canada today costs approximately \$30,000 and some of these cases were already known). (3-371)
43. That routine chest X-ray programs be applied to high-risk groups only, e.g. Indian, skid-row and gaol populations, in homes for the aged and perhaps at 60 years and over. Also for those with a "high dispersal risk" such as school teachers. (3-371)

44. That hearing screening in children be implemented in the six to nine month age group to identify problems, but not for newborn babies in view of the expense of the equipment and the fact that identification at this very early age is unnecessary. (3-371,372)
45. That hearing screening be pursued through the pre-school years in captive situations wherever possible to include day care, nursery and kindergarten centres. (3-372)
46. That vision screening be conducted and again beamed primarily at the pre-school child and repeated during the school years. Use of the Snellen chart as a screening procedure appears adequate and is economical. (3-372)
47. That the phenylketonuria program using the Guthrie test be implemented as a valid diagnostic tool but that the value of the low phenylalanine diet be assessed more carefully with respect to prevention of mental retardation. (3-372)
48. That the cancer cervical cytology program be continued at least until such time as its value is clarified. (3-372)
49. That the public health agency in conjunction with the family physician ensure that selective family planning services to include all related costs are made available to all people. (3-373)
50. That genetic counselling is made available to parents in need of it. (3-373)
51. That on a short-term basis, promotional activities should include educational programs with pamphlets being made available to the public to outline services and procedures. On a longer term basis, a more permanent educational program to prepare each generation to accept these services must include

educational programs in schools, in schools of nursing and medicine. Increased expenditures in this area now will certainly reap major long-term benefits. (3-373)

52. That one agency and one only, give service in the schools and that the agency best suited to do so is the health department and not the department of education. (3-373)

53. That health departments consider discontinuing the routine physical examination as offered in school and substitute a system of referral and adequate follow-up together with the strengthening of screening programs to include those for vision, hearing, emotional disturbance, etc. This will serve to reduce payments to physicians for such routine examinations. (3-374)

54. That the proportion of public health nursing time spent giving service actually in the school is too great and should readily be reduced. It is suggested that not more than approximately 25 per cent of total public health nursing time be spent on the school health program to include home visits in connection therewith. (3-374)

55. That health departments give increasing attention to development of more adequate programs for the prevention, early diagnosis and rehabilitation of the mentally ill and retarded at the community level. (3-375)

56. That psychiatrists and other mental health specialists be used as consultants to offer consultation and to provide education to community resource workers; that psychiatrists not be overloaded with administrative duties for example, as health clinic administrators and that their training be modified

to equip them for the "mental health consultant" role in the community setting. (3-375)

57. That community mental health clinics to include child guidance services be established in public health centres. In a parallel development acute intensive psychiatric care beds should be made available within the local general hospital. This latter development recognizes the need for "secondary prevention" which can offer much towards reducing chronicity in mental illness. (3-375)
58. That the family physician be encouraged to accept increased responsibility in dealing with troubled individuals and families and that the schedule of fees be reviewed in this context. (3-376)
59. That "sheltered workshops" be developed in the community so that patients may be trained or re-trained and through the services of Manpower, etc. placed in suitable occupations. (3-376)
60. That to meet increasing public demands for service, community resource health and allied workers to include the family physician, the medical officer of health, the public health nurse, the social worker, the clergy and others attached to education and correctional agencies be made available in the community to work with the trained psychiatric personnel. (3-376)
61. That fiscal support be provided for the fluoridation of community water supplies. (3-376)
62. That all regional preventive dental programs be under the direction of a dentist with graduate training in dental public health. (3-376)
63. That health departments initiate programs to encourage regular preventive dental care commencing at three years of age. (3-377)

64. That health departments employ adequate numbers of dental hygienists to carry out effective screening, educational and prophylactic programs in the school and pre-school age groups. (3-377)
65. That pre-payment dental care insurance plans be expanded and be made available to children as a first priority. (3-377)
66. That financial encouragement be provided for the training of dental auxiliaries to assume certain functions presently carried by dental practitioners. (3-377)
67. That further analysis of available statistics should be pursued to identify the contributions of accidents to hospital occupancy and costs particularly with respect to motor vehicles and to accidents occurring among the elderly at home. (3-377)
68. That further consideration and action should be taken by health agencies to propose and advise on legislative provision in accident prevention with respect to highway design, traffic control, the use of seat belts, etc. There is also a need for legislation respecting the use and misuse of drugs and other potentially hazardous substances. (3-377)
69. That screening of drivers as to their "medical fitness to drive" be incorporated as part of the process of determining the fitness to drive of the elderly or those suffering from a disease process which places them at risk in this context. (3-378)
70. That health agencies take the initiative in providing adequate coordination in accident prevention activities of official and voluntary health agencies, departments of education, traffic control, police, etc. (3-378)
71. That health education consultants concern themselves primarily with providing the technical "know-how"

and materials to support health unit staff who can best carry out the necessary education. (3-378)

72. That health curricula in schools be revised and that courses in "Family Life Education" be provided. (3-378)
73. That diet counselling services and nutrition information should be incorporated as part of the overall health education program, being made available through home care services, health teaching in schools, etc. (3-378)
74. That health education activities should be expanded and intensified but subjected to more critical evaluation with respect both to their effectiveness in informing the public and especially in influencing behaviour in the desired direction. (3-379)
75. That public health personnel should give leadership in determining the needs of these groups with a view to a judicious allocation of resources in relation to anticipated health effects. That the programs for the elderly, low income and other disadvantaged groups require increased emphasis and evaluation. (3-379)
76. That attractive community health centres be constructed which may in some instances be located adjacent to the community hospital. (3-379)
77. That these centres should be designed basically to house public health, mental health and voluntary health agency personnel. (3-379)
78. That health centres include an appropriate range of diagnostic facilities both for use in public health and by the physicians practising in the area. (3-379)
79. That consideration be given by government to subsidizing the costs of office accommodation for

group practice by private physicians within these same community health centres. (3-380)

80. That programs of health centre construction be promoted in all provinces and that national health grants continue to be made available for this purpose. (3-380)
81. That provincial health laboratories be prepared to offer back-up support in relation to pollution control and that health departments be kept informed at all times of results and be prepared to develop standards to protect the health of the public in relation to water and air quality. (3-380)
82. That all specimens in conjunction with the venereal disease control program be tested in provincial laboratories only to ensure that reporting back to the medical health officer is obtained in all cases. (3-381)
83. That provincial laboratories offering service to the smaller hospital and to the practising physician in the more remote areas be encouraged to continue to do so. (3-381)
84. That since "single disease" oriented agencies tend to create duplication and fragmentation of service, their development should be discouraged. (3-381)
85. That government should only subsidize voluntary health agency service operations where these are integrated with the overall delivery of care, being non-duplicative and non-self-perpetuating and subject to annual budget review. (3-381)
86. That the role of these agencies is primarily to identify gaps in service. This involves a promotional function as exemplified in community planning councils and a research and demonstration activity. (3-381)
87. That more meaningful and comparable public health practice statistics be made available. (3-382)

88. That demographic variables in the population with particular reference to age and sex composition and to fertility trends be determined. (3-382)
89. That statistics be made available to show the cost of public health services for the province as a whole and individual costs for each unit of service offered. (3-382)
90. That in due course public health records should be incorporated as part of an overall computer-linked information system. (3-382)
91. That the health department in each province set up a registry for handicapped children and adults; that such a registry NOT be operated by a voluntary agency. (3-383)
92. That public health departments take steps to ensure that individuals "at risk" following discharge from institutions be adequately followed up. (3-383)
93. That further study in the use of physician-associates is required and that such study should take into consideration the relationship between family physician and public health. (3-383)

2

Task Force Reports on the Cost of Health Services in Canada Hospital Services

Utilization
Operational Efficiency
Salaries and Wages
Beds and Facilities

Task Force Reports on the Cost of Health Services in Canada

Published under the authority of
The Honourable John Munro,
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Delivery of Medical Care

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Hospital Services

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TASK FORCE ON UTILIZATION

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In our opinion, a basic issue is effective management of hospitals. This effective management depends on good organization and trained personnel. Only on the foundation of truly effective hospital management can we expect to build sound utilization of the human and material resources of hospitals, and particularly, genuine cost control.

Good organization means balanced, co-ordinated operation of services throughout the whole spectrum of health care. It means competent supervision and clear communications. The demands of complex hospital operation necessitate well-trained personnel, trained, that is, in the techniques of management.

In our opinion, inadequacies in hospital management - in the use of expensive, skilled personnel and facilities - contribute in no small way to high costs. Hospital in-patient facilities must be used only for those patients who require them. We are not satisfied that in-patient facilities are always so used.

Again, many may legitimately require admission to in-patient facilities but are kept after this necessity has disappeared. We will be making recommendations which we feel will, if implemented, greatly facilitate proper use of these facilities. This should be a relatively short-term benefit, with a longer-term one, namely that the better use of beds now should save new construction later.

We realize that hospitals cannot be looked at in isolation from the whole health care picture, from what is happening and what is available in health care outside the hospital.

We feel strongly that the recommendations we have made will ensure that the same or better quality of care can be delivered at less cost.

Our recommendations derive from this philosophy and fall into three areas: organization, utilization, education.

ORGANIZATION

Regionalization

The question of regionalization of hospital services and indeed of all health care services has been discussed at considerable length on many occasions. We do not feel that we need discuss the advantages of regionalization at length here. These are adequately presented in the paper by Thomas Boudreau attached as Appendix 1.

However, there are certain comments that should be made. We realize that an ideal, long-term objective would be the regionalization of all health care services; regional operation as well as planning. However, a start has to be made towards this goal, and so our recommendation touches on the application of regional concepts initially to hospital services only.

Where the population size will permit, and this figure may be about five hundred thousand people, we see the necessity for the creation of regional hospital boards with executive authority. For an area or province with less than that population, we would think of the application of regional principles such as shared services and co-ordinated hospital operation, but not an additional administrative level, such as a regional hospital board. It should be understood that we are not recommending a board with an advisory function only.

Present competition between hospitals has resulted in a situation where expensive, specialized services are duplicated, resulting in ineffective utilization of them. However, this competition and lack of co-ordination has also resulted in gaps in services.

Thus we feel it vital that a regional hospital board have the power to decide, first of all, whether a special service were necessary, and if it were, the board would be empowered to allocate it to the hospital or hospitals best suited to undertake this responsibility. Again, it might be that a service already established in one hospital should be moved to another hospital for reasons of efficiency and economy. This, also, the regional board should be empowered to undertake.

Education of technical personnel, at present, is closely associated with hospitals. This board would make certain that no duplication of educational facilities and teachers occurs. For example, medical technologists in laboratory and X-ray should not be trained in all the hospitals; rather, a central program should be developed.

The board should consist of representatives from the hospitals in the region, from physicians, from municipal bodies, as well as from the general public.

Each hospital would continue to have its own administrator and board. Each hospital would continue to prepare its own capital as well as operating budget. However, this budget would be sent to the regional board for approval. This regional board would scrutinize developments with care, to ensure that any new services being instituted were being efficiently organized and that an obsolescent service was not being continued. The regular budget should be examined with economy and efficiency in mind. Following approval by the regional board, these budgets would be submitted to the provincial body. The latter would examine these budgets in the usual way, applying their own yardsticks of measurement.

Matters such as shared services and bulk buying very obviously would fall under the jurisdiction of the regional board.

In regions that contain many small hospitals, every effort should be made to have a larger hospital serve as a base for the smaller places and use transportation rather than providing expensive services in each place.

Regional boards would have access to full-time or part-time consultant personnel in such areas as nursing, work study, and so on.

Recommendation 1:

That as a first step toward eventual regional organization of all health services, there be a Regional Hospital Board with executive authority. The Board would be composed of representatives of each hospital, doctors, municipal authorities, the public, and others as appropriate. The Board would decide the role of each hospital, i.e., the services that each hospital would provide, with power to re-locate services, if necessary. It would administer the regional budget.

Mandatory Accreditation of Hospitals

The program of the Canadian Council of Hospital Accreditation attempts to ensure uniform standards of hospital care, organization and facilities throughout Canada. This is presently on a voluntary basis and there is, in our opinion, considerable variation even between accredited hospitals in their actual adherence to these standards. We feel that where we are dealing with a subject as important as the operation of hospitals, a mandatory rather than a voluntary system is needed. Hospitals which have not sought accreditation are often those most in need of up-grading their standards.

Recommendation 2 (a):

That accreditation be mandatory for all hospitals.

A national, non-government body, rather than a multiplicity of provincial bodies, operating this mandatory program would be in a better position to ensure development and maintenance of minimum national standards for all hospitals. A national body would also be in a much more advantageous situation with regard to financing of the program, and recruitment and training of resource personnel.

Recommendation 2 (b):

That a national, non-government body operate this mandatory program of accreditation, but that hospitals failing to obtain accreditation would be examined in depth by the provincial health authority who would hold the responsibility for effective follow-up of these cases.

This mandatory program would be more extensive on two counts than the present accreditation program. First, it would cover all hospitals; and secondly, the scope of the actual survey might be expanded. For example, it has been suggested that the relationships existing between administration, medical staff, and board should be explored as a routine measure during the conduct of a survey. Such a program would obviously require more money and more personnel than the present voluntary one.

Recommendation 2 (c):

That, accordingly, the Canadian Council of Hospital Accreditation be asked to prepare a statement as to the financing and resource-personnel required for a mandatory program:-

- (i) for extension of the present program to all hospitals; and
- (ii) for increasing the scope of the individual hospital survey according to the Council's own ideas.

Licensing of Hospital Administrators

Hospitals represent large and complex business organizations, and by their nature demand efficient management. The administrator is a key person here and must be fully trained in current techniques of business management and hospital services administration. With the successful completion of such training, the graduate could qualify for a limited or junior-grade license. The completion of further post-graduate training would enable the administrator to qualify for a more senior license. The individual's experience would also enter the picture.

Each hospital would be graded. This grade would reflect the complexity of the hospital so that a hospital of a certain grade would demand an administrator with the appropriate educational background, experience and demonstrated competence as represented by a senior or advanced license.

Such a program obviously would require direction by a national body responsible for the licensing of administrators and the grading of hospitals. The program itself would have to be introduced over a number of years.

Recommendation 3 (a):

That all hospital administrators be licensed and that this license be graded using education and experience as the main yardsticks. All hospitals should be graded as to the type of license its administrator requires.

Recommendation 3 (b):

That this licensing program be the responsibility of a national body.

The aim of recommendations 2 and 3 is to define, and where possible ensure the maintenance of, mandatory minimum standards for both hospital and administrator. This is the foundation for cost control and effective management of services.

Medical Staff Representation on Hospital Board

Members of hospital boards, although interested and knowledgeable about costs, seldom have adequate background information on what constitutes optimum utilization of hospital services, nor do they have familiarity with current hospital management techniques. Thus much of the control of these areas is accomplished at the administrative and medical staff level, the board usually approving.

There seems to be room for an effective orientation program or indeed a training program for new members of hospital boards. There are practical difficulties in the way of this however.

Doctors should be involved in hospital operation, not only in the medical aspects. They initiate, by admitting a patient, the expenditure of much money. The doctor should regard each admission as a major commitment of money and effort on the part of the hospital. He should be made to feel that he is a part of decision-making in the hospital.

In order to achieve this, physicians, or at least the President of the Medical Staff and the Chief of Staff, should be able to serve on the Board of Governors. This position would inform each member very clearly that some medical requests that appear modest may involve other departments to a great extent. The doctor would be more aware that whatever his work, he is a member of a team and that at times compromise is necessary.

The Joint Conference Committee allows communication between the Board and the medical staff. This liaison should be strengthened since it is one of the main communication pathways. It cannot replace the necessity of having medical men on the Board.

Forceful or dominant medical men on such a board could in time exert undue influence. Therefore, some limitation as to length of tenure by any single doctor should be defined.

Recommendation 4:

That there should be medical representation on the Hospital Board - at least the President of Medical Staff and Chief of Staff. The term of office for each medical member should be for a limited time.

Hospital Management Council

At present the Medical Advisory Committee in most hospitals is primarily concerned with medical matters - the actual patient care as reflected in the services provided by physicians, nursing, laboratory and X-ray departments, etc.

We are aware of the large numbers of existing committees and we do not underestimate the problems these create for busy medical men. However, an adequate mechanism is urgently required so that the doctor would be exposed to wider horizons. He must be made aware of the way in which his activities and his decisions affect other services of the hospital.

Conversely, there is need for a fuller understanding by many hospital departments of the thinking behind and necessity for the physician's actions and demands. We propose, as an answer to the lack of integrated action between medical staff and other personnel in many hospitals, a hospital management council. This would have representatives from the medical staff, from administration and nursing. Other full-time heads of non-medical departments would also be represented.

Such a council would formulate policy with relation to day-to-day operation. There would be an opportunity for free exchange of ideas and information

so that the reaching of decisions in the hospital would be broader based and perhaps more effective.

Recommendation 5:

That a hospital management council be created for hospitals of one hundred beds or more, to ensure integrated action by medical staff, administration and non-medical departments. Representation on this council should include members of the medical staff, administration, nursing and non-medical departments.

UTILIZATION

Pre-admission Documentation

Doctors commit large sums of public money whenever they admit and treat a patient in a hospital. Too frequently, they fail to recognize and accept responsibility for the financial implications of their activities.

Each hospital admission is a serious, deliberate act requiring thought and planning, not only by the patient, but by the doctor. Therefore, an admission to hospital should only be requested in the context of a clearly defined purpose and previously thought-out plan.

One way to improve the utilization of hospital in-patient facilities is to ensure that only those cases requiring such facilities are admitted to them and for only as long as they do require them. For purposes of utilization review and control, the use of general hospital in-patient facilities has three aspects:

Pre-admission

Active treatment or investigation

Discharge planning

Present hospital in-patient practice focuses far too greatly on what is happening within the hospital walls - that is, on the second of these aspects - to the neglect of the other two, which would commit the hospital to a greater degree of planned involvement in the

surrounding community. This recommendation touches only the pre-admission phase, and specifically the possibilities of pre-admission work-up and documentation as an aid to improving utilization of in-patient facilities.

Prior to the admission of an elective patient, unless he is a re-admission, the admitting department will, usually know only, the patient's name, address, telephone number, age, sex, diagnosis, and referring and attending doctors. The nursing unit may have less information - the diagnostic and other departments perhaps nothing.

So when the patient arrives at the hospital there is a commitment of hospital personnel, time and effort to obtaining information from the patient for administrative and clinical purposes. This involves, for example, the admitting office, the nursing unit, stenographic and typing pool staff.

This recording activity does not require the resources of a hospital but can be done elsewhere. This information is necessary for effective treatment. It is part of the PREPARATION for hospital treatment. No elective case should be admitted to hospital without such adequate preparation. Moreover, presentation of such documentation to the hospital should be not at the time of admission of the patient, but sufficiently prior to admission to serve as an aid to scheduling the workload of hospital departments involved.

The information should include complete identifying data of the patient, previous history, history of present illness and a statement of all investigative and treatment measures intended.

This proposal is perfectly in tune with the theme that expensive hospital resources should be committed only to those tasks which require such resources. It involves the transfer of a recording activity from

the hospital to the physician's office. This may not meet with an enthusiastic response from the medical staff, but should improve the management of the patient's treatment or investigation while in hospital. A standard form supplied to the offices of members of the medical staff and composed of two parts - one to be completed by the patient, and the other by the physician - would form part of the patient's record for both hospital and physician's office.

Another role for the proposed pre-admission document - its mandatory submission to the hospital in advance of the patient's appearance at the admitting office - invites its use in admission screening as part of a current continuing hospital utilization review program.

Some provincial regulations do touch on this area but are either not enforced or are inadequate. Enactment of the regulations we propose should be placed in the hands of the hospital administrator. A word of caution, however: a doctor faced with mandatory pre-admission documentation has a right to expect first-class service from the hospital medical records department.

An efficient medical records department is vital to the successful implementation of this recommendation. No elective patient should be allowed to be admitted unless this essential documentation has been previously submitted to the hospital.

Where the patient is admitted as an emergency, documentation within twelve hours will allow effective assessment by the utilization committee.

Recommendation 6:

That for all elective admissions to hospital, a history, a description of pertinent physical findings, and a statement of the proposed diagnostic

and treatment regime, should all be presented to the hospital prior to the admission of the patient. This should be a mandatory condition of admission for the elective case. Where possible, a note of previous pertinent, investigative results should be given. With regard to genuine emergency admissions, it should be mandatory that such a record be placed on the chart within twelve hours of the admission. The implementation of these proposed mandatory conditions for admission of a patient we see as the responsibility of the hospital administrator.

Medical Records

Current methods of presenting statistical information on hospital operation have defects. Much information is submitted in a form indigestible by the average hospital administration. For teaching hospitals the information is often inadequate for their needs. We feel that priority should be given to developing a statistical program more suited to the needs of the individual hospitals.

Recommendation 7:

That a survey be undertaken of the actual hospital use of statistics furnished by the various agencies, such as, Hospital Medical Records Institute, Professional Activity Studies, Dominion Bureau of Statistics, Canadian Hospital Association, and the Department of National Health and Welfare. This survey should explore what are the actual needs, which statistics are most used and which least used. As a result of this survey, the practical needs of hospitals for statistics would be more clearly defined.

Norms of Utilization of In-patient Treatment and Diagnostic Services.

All hospital services, whether the laundry, housekeeping, laboratory or ward unit, are a response to one thing and that is the decision of a doctor to use these facilities for the diagnosis and treatment of a patient. Thus, we would strongly recommend the development of norms or generally accepted criteria for the use of hospital treatment and diagnostic services. Norms are particularly indicated in the following areas:

- Criteria for admission
- Criteria for investigation
- Criteria for length of stay
- Criteria for discharge

The work of the University of Michigan Medical Centre in developing such norms for forty specific diagnoses is a step in the right direction.

As examples, we might put forward the following:

Surgery:

- 1) Uncomplicated acute appendicitis - appendectomy in a basically healthy individual - length of stay norm - four days post-operative.
- 2) Repair of inguinal hernia in a basically healthy adult - length of stay norm - three days post-operative.
- 3) Cholecystectomy - for chronic gall bladder disease in an otherwise healthy good risk adult - length of stay norm - seven days post-operative.

Medicine:

Acute myocardial infarction - uncomplicated - length of stay norm - 14 to 21 days.

In medicine, pre-admission planning is even more important than in surgery. Adequate pre-admission planning should result in better utilization of hospital

services and possibly shorter duration of stay. Some conditions, of course, will not allow norms and will have to be assessed individually.

Gynaecology:

Diagnostic curettage - length of stay norm - less than 24 hours.

Norms could be national, regional, or even peculiar to a locality. Examples are known where hospitals have presently established such norms, and where the physician knows, for example, what the length of stay norm is for the particular condition for which he plans to admit a patient, the pressure is then on him to plan investigation carefully in advance of admission. If he runs out of time for the treatment of his patient, the utilization committee steps in.

The application of norms in the areas mentioned - for example, criteria for admission of certain types of case to hospital - has an obvious contribution to make to the effective use of expensive hospital in-patient facilities by ensuring that only such cases as require these facilities are actually admitted.

Without the development of such norms, hospital administration is severely handicapped in its efforts to ensure rational genuinely effective use of in-patient facilities. We stress again that such norms can only be developed by the medical staff. Here then is an area where the hospital medical staff can make a vitally necessary contribution to good hospital management.

Recommendation 8:

That the medical staff develop norms or standards for the use of hospital treatment and diagnostic services. Norms are particularly indicated in the following areas:

Criteria for admission
Criteria for investigation
Criteria for length of stay
Criteria for discharge

Once the norms have been developed by the medical staff, the hospital administration should be given the responsibility for applying them.

Diagnostic Services Utilization

Regulation of Practitioner Access to Diagnostic Services.

It has always been considered by doctors that it is their right to order any test they wish and expect the results to be forthcoming from the hospital without any question. It is not infrequent that doctors order procedures, the results of which they are unable to interpret. In many instances, doctors order procedures and tests when they do not know the limitations of the test result that they obtain.

- (a) We feel that diagnostic procedures should be divided into groups and some of these groups should be restricted to only those individuals or specialists who can make definitive judgments on the results. In other words, unlimited access to all procedures should be carefully studied. Some procedures should require a compulsory consultation before the test is done.
- (b) In order to impress upon our graduating doctors this new concept of ordering of procedures, the teaching hospitals should grade their tests. As the intern passes into the resident phase, so he passes from one allowable range of tests to another.

The Utilization Committee is, in our opinion, the ideal body to oversee this program.

Control of New Techniques and New Procedures.

It is common practice today for a doctor to request procedures and tests that he has seen or heard of in other areas or journals. In many instances, such tests and procedures may still be in a semi-research or impractical form. Each hospital should control not only the tests that are done in the institution, but also those that the institution will be responsible for referring elsewhere. Here, again, the Utilization Committee is the body to oversee this activity.

Research.

The Utilization Committee should be given responsibilities as a research review body. Often a great deal of informal research is carried out by members of the medical staff either for their own interest or because they are writing a paper. Often this is done without the knowledge or permission of anyone within the hospital. We feel that this type of research should not be undertaken, in view of the heavy demands it may make on laboratory services for example, unless it has been cleared through a special committee such as the Utilization Committee.

Routine Orders.

Many hospitals, many doctors, many services, have routine orders for a variety of conditions and patients. These orders may include admission routines, profile studies, and so on. All of these routine procedures require regularly to be reviewed by administration and the medical staff. Such review should be a function of the Utilization Committee.

Recommendation 9:

- (a) That a Utilization Committee be mandatory in hospitals with a medical staff of twenty-five or more;
- (b) That a prime mandatory function of the Utilization Committee be

to undertake the utilization controls discussed above, namely,

- (i) regulation of practitioner access to diagnostic services;
 - (ii) control of new techniques and new procedures;
 - (iii) control of informal research; and
 - (iv) regular review of routine orders.
- (c) That the directors of diagnostic departments concerned be given authority to carry out the policy laid down by the Utilization Committee in respect to the functions described in 9 (b) above. Directors of these diagnostic departments should be co-opted as full members of this Committee when their departments' affairs are being considered.

Discharge Planning

Every hospital should have some form of social service. Hospitals of less than two hundred beds may require only a dedicated individual interested in social service work. Some hospitals have done extremely well by using the services of a nurse or similar qualified person. Hospitals over two hundred beds should have a discharge planning group.

This group should have at least one worker who is fully paid by the hospital to do the work involved in finding the optimum disposition for the patient. This obviously should be a social worker or her assistant, but could be a nurse. This discharge planning group should have a medical member.

The discharge planning group would be greatly helped by the implementation of the recommendation with regard to pre-admission documentation (Recommendation 6, above).

The discharge planning officer should take the initiative, see the patient early in the course of hospitalization, and begin adequate discharge planning even while the patient is still on active treatment. The discharge planning group would make a list of diagnoses or categories of patients to be automatically seen by the group so as to allow earlier placing of the patient and adequate follow-up care. We see the Victorian Order of Nurses as part of this discharge planning group, where possible.

Recommendation 10:

That in hospitals of over two hundred beds there should be a discharge planning group. The person in charge of this group could be a social service worker, and in some cases could very well be a nurse or similar qualified person interested in this type of activity. There should be representation from the medical profession among the membership of the discharge planning group, and we would recommend that representation from community health agencies also be invited.

Emergency Care

The emergency department today handles not only emergency and urgent cases, but a very large volume of non-urgent general-practice-type patients.

When we refer to emergency departments it should be understood that we are referring to departments handling a genuine emergency case load.

Therefore, we note with dissatisfaction the prevailing situation in urban hospital emergency departments where often fifty per cent or more of the case load is general practice or routine out-patient type activity. There are several factors involved here.

- 1) The transient nature of a sizable proportion of the population today results in a lack of a stable

patient-doctor relationship, in many cases. When illness strikes, the patient seeks the nearest hospital.

- 2) An influx of new Canadians who have been accustomed in other countries to seek medical care directly from the hospital, and who continue this practice in Canada
- 3) The formation of group practices and clinics has tended to blur patient-doctor relationships.
- 4) There is a withdrawal of physicians from the practice of giving medical care in the home.
- 5) The patient is able to travel with ease in today's circumstances and accordingly is not dependent on a physician coming to his home.

Recommendation 11:

That emergency facilities and services, particularly in urban areas, should not be distributed between all hospitals in that area. One institution, in some cases more than one, should be designated as the emergency centre for the area. This centralized emergency service would be staffed with highly qualified people with the necessary sophisticated equipment and would be able to offer a truly comprehensive emergency service.

EDUCATION

Undergraduate and Postgraduate Education

Educators generally must - some already do - take a genuine and active interest in the subject of optimum utilization of hospitals. In this respect we would like to quote from a report of the Association of American Medical Colleges given in September 1968 to a workshop on the medical curriculum and published in the Journal of Medical Education for January 1969 (Vol. 44, No. 1).

One of the recommendations is that: "The medical schools must now assume a responsibility for

education and research in the organization and delivery of health services. Simply increasing the number of physicians will not relieve the impediments to optimum support of the health of the people. The organization of the manpower required to deliver health services is presently inefficient ... The costs of medical care must be controlled if the present system is to retain its credibility. Research must be undertaken by medical schools to develop alternatives to hospitalization.

"The cost-benefit relationship of the physician's decisions must become a part of the evaluation of the appropriateness of those decisions in the educational programs of our medical schools. The problem of maintaining quality and effectiveness of health services while developing more efficient organization, more general availability, and more reasonable costs is one that will not be solved without the participation of the medical schools. Neither knowledge nor numbers will suffice if these problems in delivery of health services are not resolved".

The undergraduate in our medical colleges often finds that his teachers lay more stress on diagnostic procedures than on a history and physical examination, leading to a diagnosis.

Such influences at the undergraduate level will compound the problem in the postgraduate career. There is a steady increase in the utilization of diagnostic procedures in teaching hospitals as contrasted to non-teaching hospitals. At any rate whatever the cause, it is common experience that the newly-trained doctors just coming out of college are the greatest utilizers of diagnostic services.

Education must be undertaken at the undergraduate and graduate levels in order to provoke the involvement of the present and future physician in the economic and administrative aspects of health care.

We are not suggesting that either undergraduate or postgraduate medical students be given courses in the techniques of health service administration, but simply that they have full exposure in the curriculum to the principles and problems involved in the organization and delivery of such services.

Indeed, we recommend utilization of hospital-based or other services as an important area for supervised research projects by medical students. In this regard, the Royal College of Physicians and Surgeons should be asked to look at its training programs and examination requirements.

We would stress again what we said in the general preamble at the beginning of this report namely that effective management depends on good organization and trained personnel and that part of good organization is the establishment of effective communication systems.

It is worth quoting Dr. E.G.Q. Van Tilburg, M.D., who in a recent paper¹ noted that "Invitations to attend meetings of the many different medical staff committees have proven to be a very valuable experience which will equip the future physician with a certain degree of insight into the activities of the medical staff. Sooner or later, when in private practice, he will be called upon to serve on these committees and shoulder the work with the medical staff."

Recommendation 12:

- a) That aspects and problems of present patterns of utilization of hospital services be presented to all undergraduate medical students as a part of the curriculum and that research into these areas by the medical student be encouraged.
- b) That, as a formal part of the medical student's curriculum, there be teaching and research in the

organization and delivery of health care services.

ADDITIONAL COMMENTS

Other areas were touched on by the Task Force on Utilization. It is our understanding that many of these have been explored in depth by other task forces, but we would like to make the following comments which are not presented as formal recommendations.

Incentives:

The task force believes that realistic incentives must be developed - incentives which will encourage hospitals to make the best possible use of facilities and of funds. For example, a hospital which conducts an activity for less than the budgeted figure should not be penalized in the following year's budget as a result. One possible incentive is the return to the hospital of a proportion of the savings, this bonus, if you like, being a reward for producing the same quality service at a lower cost. We are not talking about cost savings in isolation. Indeed, the application of incentive programs may initially produce a more costly activity, but one which might lead towards more effective use of resources.

Incentives must in some way be tied to norms of utilization. Incentives probably have a place both at regional and individual hospital levels.

Alternatives to Hospitalization:

At the present time we are treating out-patients in hospital with expensive personnel and facilities. The task force feels that many of these people could be looked after as well with less highly qualified people and less sophisticated facilities.

There is a great need in our opinion to experiment with alternatives to hospital handling of certain types of morbidity.

Self-Care Units:

We suggest the further development of self-care units. We feel that use of this type of facility for patients requiring laboratory and X-ray investigation and other diagnostic work-up, but who do not require admission to in-patient facilities, would allow more effective scheduling by diagnostic departments of their case load.

Rationalization of Insurance Coverage:

At the present time assigning a patient to chronic care means that his pension and hospitalization are paid for by government agencies. However, in Homes for the Aged charges are paid by the patient himself. In other words, he may lose his pension. In many instances, the delineation between chronic care and Home for the Aged care is very difficult, if not impossible. At any rate, many patients are put into the wrong institutions for very real monetary reasons. Some attention should be given to rationalizing the coverage of related facilities.

(APPENDIX 1) Regionalization of Health Services,
Thomas J. Boudreau

(APPENDIX 2) The Utilization of Diagnostic Services,
Summary and Recommendations,
O.C. MacIntosh, M.D.
Consultant in Laboratory Services,
Nova Scotia Hospital Insurance Commission.

REFERENCE

1. A study of the extent of knowledge of hospital and medical staff organization as found among interns and residents in Canada - University of Toronto, School of Hygiene, 1967. Dr. E. G. Q. Van Tilburg, M.D.

APPENDIX 1

REGIONALIZATION OF HEALTH SERVICES

by

Mr. Thomas J. Boudreau
Director
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REGIONALIZATION OF HEALTH SERVICES

Due to the nature of health services, the great variety of the functions performed by these services, the multiple factors of production and the universality of consumption, the geographical aspect of this problem is extremely important.

This chapter which is divided into four main sections, is to:

- 1) define regionalization or, to use the common expression, regional planning of health services;
- 2) to explain why regionalization is necessary;
- 3) to say a few words on the methods of regional planning of health services; and
- 4) to point out some of the advantages of these regional organization policies.

I. Definition of the Regionalization of Health Services.

Regionalization of health services is the visualization or integrated planning of a system of care with multiple but coordinated functions, serving a geographical area demarcated not by rigid political boundaries but according to criteria based on (1) people's consumption patterns with respect to care¹, and (2) technical factors determining the optimum dimensions of different types of services, taking into account, of course, the costs involved in distances existing between patient and the place where the services are provided.²

It is important to stress at this point, as was pointed out by Don R. Swanke³, that the concept of regional planning should, if it is to be truly effective, include manpower-equipment-construction altogether and not just the hospital system as is almost always the case in the literature and efforts in the field of health planning.

The concept of regional planning must also integrate, within the same system of care production, all

functions or types of care, that is, preventive, diagnostic, curative and rehabilitation.

Finally, we should note that complete regional planning should allow for:

- 1) a stock of equipment, construction and manpower within a region;
- 2) distribution of this stock throughout the territory;
- 3) a hierarchy among the different health centers of the region;
- 4) functional relationships among these health centers, i.e., communications, movement of patients and especially movement or travelling of specialists associated with the large centers to smaller centers to give consultations or make special tests.⁴

II. Reasons for the Regionalization of Health Services

Four main reasons, in our opinion, make this organization or regional structuring of health services necessary.

A) Specialization:

We know how specialized medicine has become in the past years. When the notion of specialization is examined closely, it is readily seen that there is a very considerable disparity in the frequency of the different illnesses requiring the services of different specialists.

The following table illustrates this point:⁵

<u>Branch of Practice</u>	<u>Estimated Population per Physician</u>
General Medicine	2,000
General Surgery, Obstetrics/Gynecology	10,000
Internal Medicine, Ophthalmology, Urology	20,000
Allergies, Pediatrics	25,000
Radiology	30,000
Pathology	35,000

<u>Branch of Practice</u>	<u>Estimated Population per Physician</u>
Dermatology, Otorhinolaryngology, Plastic Surgery, Psychiatry	50,000
Orthopedic Surgery	75,000
Cardiology, Neurology, Thoracic Surgery	100,000
Neurosurgery	150,000

It shows very clearly the illogic of setting up for the production of care nothing but similar area-wide centers throughout a country or province. In fact, some functions or types of care require a greater population than others for their full utilization and must therefore be more spread out if a truly effective production system is to be set up.

Hence the need for setting up different types of Health Centers some of which, serving only limited population, will provide only very general care while others, serving larger districts and populations, will provide somewhat more specialized care, and so on up to the main regional center which, serving a large population, will provide the main specializations.

Ideally, one could say that the dimensions of the region should be defined according to the type of treatment required by the largest number of people in order to assure the adequate functioning of a unit providing such treatment. In practice, of course, adjustments of these optimum dimensions are continually required so as to take into account demographical needs.

Finally, it should be pointed out how there springs from this hierarchical arrangement of health centers we have just described, the need for functional relationships among the health centers which have vital complementary ties with each other.

B) Methods of Transportation:

The development of transportation methods, so greatly reducing distance and extending the radius of action of the urban centers, has made it possible to safely concentrate specialized health equipment and manpower in regional or sub-regional centers. To go 20 or 30 miles in the country now is not the same adventurous achievement it was 30 or 50 years ago. Even a distance of 100 miles over our highways has become a short trip.

C) The Public Nature of Institutions:

The charitable nature of hospitals in the past was not necessarily favourable to the pursuit of maximum efficiency in care production. State intervention and the increasingly public character of institutions in the field of health, springing from the principle of universality, have made it absolutely necessary to be concerned with output which in brief, is simply good management of public funds. In such a context, it is less and less acceptable to preserve that lofty isolation separating our hospital institutions from each other, and to perpetuate the separation among certain so-called public health institutions such as health units and the whole medical system. Naturally, into the liaison among the different institutions comes the notion of regional organization.

D) Regional Disparities:

Finally, as Anderson points out⁶, it is not possible to establish for the universe, a country or even a province single standards of care needs and consumption. Methodical research still shows that these needs vary from region to region.

III. Mechanisms of Regional Planning

A) A Planning Agency:

Regional health planning experts all agree that in order to be effective, regional health planning as

defined in the preceding pages must necessarily be based on the participation of the different parties concerned: the producers of care as well as the consumers and financiers.⁷ Of course, in addition to this participation by persons and groups concerned, regional health planning agencies must also integrate specialists from a number of scientific disciplines (economists, statisticians, sociologists, doctors, health administrators, etc.) and this team-work has become essential in producing plans based on scientific criteria of efficiency.

Furthermore, these regional planning agencies must necessarily be on a permanent basis due to the large number of variables that have to be considered in this type of planning (population, technology, manpower, etc.) and the impossibility of planning all of these factors in an accurate and precise way for more than a very limited number of years.⁸

B) Regional Structure:

The first objective of a regional health planning agency is inevitably, before tackling whatever precise or specific problems there may be, to draw up a general overall plan, or if you want, a model of the health system of the region.

When completed, this overall plan or model must necessarily be expressed as a structure grouping the health institutions of the region and integrating the health manpower and equipment. In addition, the model must specify the function or functions of its different elements and take into account the functional relationships between these different elements.

No doubt it is in the field of hospital planning that the most interesting attempts at regional health planning are made. These attempts, even if only fragmentary in comparison with general planning, nonetheless make an interesting starting point and are a

very useful illustration of what a regional planning of all health services could be. As an illustration therefore, we shall briefly describe what is meant by regional hospital structure.

Most authors agree that a hospital region must include, at its center, at least one large medical center (regional) providing the whole range of care in addition to active research and teaching programmes. In addition to this regional center, sub-regional hospitals (subdivisions), local hospitals and sometimes rural hospitals are generally specified.

What is necessary to carry out and complete now is the transition from this regional structure, limited to the hospital sector, to a structure comprising the whole group of health services, equipment and personnel. From this point of view, it will probably be necessary to drop the traditional concept of hospital and use more and more the concept of health center. These health centers (regional, subregional, local and rural) will be conceived:

- 1) as institutions, combining the group, equipment and personnel providing the different categories of care (preventive, curative, diagnostic and rehabilitation), and
- 2) as agencies, coordinating the group of health activities on the territory served for their level of functioning including for example home care, detection in schools, health education, etc. The notion of hospital bed will not be essential to the definition of these centers as some may not have any beds.

In our opinion, this concept of the group has become absolutely essential for a number of reasons, the main ones probably being:

1. the need for full utilization without duplication of personnel and equipment, the high technical level of which imply very high costs.

2. the need for good coordination at the level of the producer of health care so as to get maximum results from substitution and integration between the factors.
3. the need to consider prevention, diagnosis, therapy and rehabilitation as different functions that must be performed by one integrated health care system (personnel, equipment, construction).

C) Integration of Manpower in the Total Model:

Attempts to produce regional system models consisting of construction, equipment and personnel are only in the beginning stages. However, it is possible already to foresee the great practical use of such models particularly in a plan such as ours where health investments are appearing more and more in the Government budgets.

In fact, control of the placement of investments and equipment no doubt is the most effective method of encouraging a systematic manpower distribution throughout the territory and especially for guaranteeing an effective integration of all health workers within the system. In our opinion, there would certainly be good reason to explore the possibility and advantages of using such a mechanism to integrate within the whole care production system all health including general practitioners, pharmacists, dentists, optometrists, etc. The collective health equipment has become an indispensable instrument in efficient care production and it is absolutely unacceptable to subject the relationship between manpower and equipment to demands other than those dictated by the pursuit of efficiency.

This integration of manpower will also imply the development at the top of a new type of health administrator who will probably succeed or superimpose the traditional hospital administrator. This new type of administrator must have a much more general view of health problems, both at the community level and at the

level of the different types of care that the Health Center will be called upon to coordinate (hospital care, out-patient clinics, home care, detection, education, etc.).⁹

D) Planning Technique:

It is impossible to imagine that a system as complicated as total care production in a given territory can be analyzed and planned without resorting to the most modern techniques. Swanke compared the functioning of the health industry with the operation of the American ballistics and space exploration programmes. Considering the immense diversity of personnel and equipment, the high degree of sophistication of certain very specialized manpower resources and equipment, the comparison is certainly valid.

Accordingly, the great benefit space programmes have derived from modern planning and decision-making methods made possible by computers could certainly apply to the health field. For example, we are thinking here of operational research and systems analysis techniques.

IV. Advantages of Regionalization

The first goal of regional planning is clearly to increase the efficiency of the system. Therefore, it is only normal to give as the first advantage of efficient regional planning of health services, a greater efficiency, that is, a reduction in the production costs of a given level of health. This advantage is mainly the result of the best possible control of costs, the elimination of unnecessary duplication, systematic use of substitution possibilities between the different factors or functions (e.g., home care vs. hospitalization prevention vs. cure, etc.), the possibility of developing services according to their optimum dimensions, the standardization of statistical, administrative and accounting procedures, etc.

The second main advantage in our opinion stems from the possibility that such an integrated system will utilize all health personnel at full efficiency because of the functional relationships between the different specialities and services and due to the opportunity the system provides for developing efficient permanent teaching programmes.

A third major advantage certainly lies in the fact that within an integrated overall structure, it is possible to carry out an extremely interesting teaching programme for future health workers. This integration makes it possible to place the students in actual contact with the whole health team and allows them to circulate freely throughout the whole system, thus enabling them to become familiarized with the different aspects of care production.

May we finally mention that the permanent regional planning of health services is a mechanism of gradual and continual adjustment or evolution of services in terms of new techniques and needs.

APPENDIX 2

THE UTILIZATION OF DIAGNOSTIC SERVICES,
SUMMARY AND RECOMMENDATIONS

by

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UTILIZATION OF DIAGNOSTIC SERVICES

A constant increase in the rate of utilization of diagnostic services, whether measured on a per diem, per separation or total basis, has been evident for many years. This increase has been in part due to a more scientific approach to the practice of medicine and in part due to the rapid development of improved techniques, facilities, equipment, and personnel for supplying them.

In the past number of years, the increase in these rates has been very precipitant, especially in teaching institutions. Whether this is merely a progression of the natural increase previously referred to, or whether other factors contributing to mis-utilization of these services are now assuming a greater significance is a question which deserves careful consideration.

CRITERIA AND STANDARDS

There are no theoretical limitations to the use of diagnostic services in the medical care of the patient. In the absence of patient financial responsibility, the only practical limiting factors are the availability and extent of the facilities to provide them, the dictates of common usage, and the sense of social responsibility of the physician requisitioning them.

Whether the financially responsible patient receives less services than "desirable or necessary" under such circumstances, or the patient who is not financially responsible receives more than "desirable or necessary" has never and probably never will be authoritatively decided.

The crux of the problem of over- and under-utilization is then to establish what is a "normal" rate of utilization for the diagnostic service in question. This problem can only be approached on the basis of the productivity or effectivity of the service.

Since the vast majority of diagnostic procedures have at least some productivity or effectivity, and since there are no theoretical limitations to their use in health care, one is forced to the conclusion that the legitimacy of the rate of utilization of any diagnostic procedure must be decided largely on consideration of its effectivity or productivity in relation to the funds available to provide it. The problem of utilization of diagnostic services is, therefore, not solely a medical problem, but an extremely complex medico-economic problem.

Unfortunately, although very considerable public funds have been expended on research into problems of lesser import, applied research directed towards providing most necessary information on this subject has never received the encouragement and support that it obviously merits.

Funds should be made available and research should be stimulated and fostered on the utilization, productivity and effectivity of diagnostic services and the criteria and standards for their normal and reasonable utilization, in accordance with the funds available for this segment of health care. In the absence of a direct attack on this aspect of the problem, all other approaches are merely temporization and improvisation, although this approach must of necessity be taken at this time.

ATTITUDE OF THE PHYSICIAN

Fuchs¹ states, "It is a fundamental proposition in economics that decisions involving the allocation of resources to competing goals requires a weighing of benefits against costs. However, there is little in the training or the motivation of a physician to impel him to think in these terms. In this respect he is not different from any technologically oriented person, but

almost nowhere else in the economy do technologists have as much control over demand.

It is evident that the complete freedom of control over demand hitherto exerted by the physician must be tempered by an increasing recognition of economic truths. If this recognition does not come from within the profession, economic necessity will dictate its application from without.

IMPACT OF THE TEACHING INSTITUTION

There is a quite remarkable increase in the per diem utilization of diagnostic services in teaching hospitals as compared to non-teaching hospitals, an increase that does not seem to be sufficiently justified by the greater complexity of the cases or the legitimate teaching requirements of the former.

Undergraduate medical education gives ever-increasing emphasis to the scientific aspects of medicine and particularly to the use of ancillary diagnostic services in this respect.

In teaching hospitals provisions are rarely made for the limitation of authority for requisitioning diagnostic procedures to those trainees known to be qualified and experienced in their use and interpretation.

Lack of economy and discretion in the use of diagnostic services is evident in the undergraduate experience of the student. This attitude is carried over into his future practice.

PROBLEM OF UNIVERSAL LICENCE

The range and sophistication, cost and complexity of the large number of services available to the medical practitioner make it unreasonable to expect that all categories of practitioners can apply them all judiciously and interpret their results correctly.

The Medical profession exhibits little desire to take the initiative to restrict access of members to those diagnostic procedures which they are considered qualified to use. Access to certain classes of diagnostic services should be limited by hospital regulation to those practitioners and medical trainees especially qualified in their use.

RESEARCH AND ITS IMPACT ON UTILIZATION

Applied research in hospitals and especially in teaching hospitals is a necessary adjunct to high quality medical services and education. Nevertheless, it should be largely restricted to those projects meriting Medical Research Council grants and approval. When diagnostic services are involved, they should be provided for out of grant funds and not be allowed to masquerade as medically necessary patient services.

Very considerable amounts of diagnostic services may be utilized by informal trials and experiments by individual physicians without reference to and often without the knowledge of hospital administrators and diagnostic department directors.

Hospitals lack effective mechanisms for limiting the use of diagnostic services for this "informal research" to that considered legitimate by appropriate regulating bodies of their medical staffs.

EFFECT OF ROUTINE AND CONTINUING ORDERS

Uncontrolled proliferation and retention of routine or standing orders and indiscriminate use of continuing daily, hourly, or continuous monitoring tends to produce above average levels of utilization of diagnostic services, often without corresponding increases in productivity or effectivity.

The initiation of routine orders for diagnostic services should require administrative approval, and the

number and extent of such orders in any institution should be subject to annual administrative review.

Provision should be made by hospital regulation to restrict daily, hourly, and continuous diagnostic service monitoring to patients where, in the opinion of a qualified consultant, it is necessary and to ensure that it is discontinued when the necessity ceases to exist.

NEW AND UNTRIED TECHNIQUES

Hospitals lack effective mechanisms for ensuring the legitimacy of diagnostic procedures developed by research laboratories before their adoption for routine use. New and untried procedures and techniques are often promoted indiscriminately by medical staff and manufacturers of supplies and equipment.

Hospitals should develop methods to discriminate and regulate the adoption and proliferation of such techniques, in diagnostic service departments, until their accuracy and effectivity is firmly and definitely established.

DIAGNOSTIC SURVEYS, SCREENING AND CASE-FINDING PROGRAMS

Diagnostic surveys, screening programs and case-finding programs initiated by individual physicians or hospital medical staffs account for an increasingly large segment of diagnostic services utilized.

It would appear that such programs in hospitals should come under the purview of practitioners specially trained in public health and preventive medicine and that the costs of diagnostic procedures utilized in such programs should be more properly borne by public health grants than by hospital service funds.

HOSPITAL RECORDS AND THEIR AVAILABILITY

Inter- and intra-hospital inaccessibility and unavailability of hospital records contributes greatly to unnecessary utilization of diagnostic services.

Diagnostic service records must be readily available to physicians if unnecessary reduplication of examinations is to be avoided. Inefficient data presentation and delivery systems in hospitals, and uncooperative and inadequate record departments should be replaced and improved.

OUT-PATIENT DIAGNOSTIC SERVICES AND IN-PATIENT UTILIZATION

Reduction of utilization of in-patient diagnostic services by provision of out-patient diagnostic services at public cost has been appreciably limited by other factors.

The provision of diagnostic services to out-patients as a public service probably relieves pressure on hospital beds. Any cost savings are, however, inflated by the marked increased utilization of such out-patient services resulting from such action.

A TWENTY-FOUR-HOUR DAY, SEVEN-DAY WEEK OPERATION

Claims are made that provision of routine diagnostic services on a 24-hour-per-day, seven-day-a-week basis would result in a marked reduction of in-patient stay. These claims have never been proven. It would seem unlikely that operation of these departments on this basis would be greatly effective, unless all departments, including operating rooms, medical staff, etc., operated on the same basis.

In addition, utilization of diagnostic services generally increases directly with their availability. Provision of routine diagnostic services on a twenty-four-hour, seven-day-a-week basis leads to much higher utilization rates than might be anticipated, and would be necessitated, by the dictates of better medical care and reduction of length of hospital stay.

DECENTRALIZATION AND PROLIFERATION

Decentralization of traditional diagnostic service departments and proliferation of specialized diagnostic service departments in the larger hospital results in increased utilization and increases in unit costs.

The degree of dispersal and specialization of diagnostic service departments should be carefully regulated by hospital management.

DELEGATION OF AUTHORITY

Governing boards rarely formally delegate any authority to committees of medical staff or departmental directors to enable them to cope efficiently with what they may consider unreasonable demands for diagnostic services.

Departmental directors and utilization committees cannot be expected to control utilization by persuasion and in fact have little to gain by attempting this. Some incentive should be provided for departmental directors to attempt to control utilization, such as allowing the operating expenses saved to be applied to the purchase of capital equipment.

Poorly defined, accepted, and enforced hospital administrative structures are an important factor in contributing to the mis-utilization of ancillary diagnostic services. It is rarely found that any effort has been made by individual hospitals to provide necessary definition of the term "medically necessary" for the benefit of its physicians in the light of hospital resources available to them.

Hospital administrators are usually ineffectual in controlling utilization, excepting by budgetary restriction. This action solves nothing and leaves all parties concerned in an antagonistic and uncooperative frame of mind.

FEE FOR SERVICE REMUNERATION

Fee for service remuneration of departmental directors is not considered to be a significant factor in increasing utilization, excepting possibly in those cases where the department director is in a position to requisition the services provided by the department which he directs.

PRIDE, PREJUDICE, PROFIT, PRESSURES AND GOVERNMENTS

Development of non-integrated unstructured diagnostic service departments without any overall planning contributes materially to misutilization of these services.

The vulnerability of political democracies to national, provincial, municipal, religious, professional and political pressure groups has resulted in inefficient, ineffective, costly, unstructured and unintegrated systems for the delivery of diagnostic services.

The prevalence of obvious waste occasioned by unnecessary duplication of personnel and facilities due to failure of government at all levels to withstand these pressures is not conducive to appeals for economy in utilization of diagnostic services on the part of the medical profession in general.

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TASK FORCE ON OPERATIONAL EFFICIENCY

Chairman: Mr. P.E. Swerhone,
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Deputy Chairman: Mr. O.W. Busat,
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Members: Mr. G.B. Rosenfeld,
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Mr. G.E. Fetherston,
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A need to review the "rising costs of health services" in Canada was determined by the Ministers of Health at their 1968 conference. A number of task forces were established to look into the costs of health services to see if their costs could be maintained at a reasonable level without negative effect on the quality of care. The area of hospital services was singled out for detailed review by the Task Force on Operational Efficiency.

The terms of reference were broad enough to give the members of the task force an opportunity to probe into all aspects of hospital activities. A review of this magnitude would take more time than was available to the task force. Therefore a program of priorities in reviewing the hospital activities and their effect on operational efficiency was determined.

It was decided not to spend time in defining "efficiency" or "inefficiency". The task force concluded that the current level of activities in hospitals could be made more efficient with perhaps a containment in the case increase rate.

On this basis a review of the hospital organization including many departments was undertaken. From statistics available it was determined that the review would concentrate on the area of activities in hospitals of 100 beds and over. However, it was acknowledged that the conclusions and recommendations would in most cases have ramifications for smaller hospitals as well.

While the review concentrated on recommendations that would provide an immediate or short term beneficial effect, it also brings out those which may take longer to implement. In some cases further studies will be required to probe in depth into problems as exposed.

The following report of the task force's review and findings does not suggest a priority by the

sequence of presentation. The priority of implementation will vary from province to province, region to region, and even institution to institution.

ORGANIZATION

By far the largest problem that hospitals face is one of organization. In the hospital there is a paradox surrounding policy making.

- (1) The legally responsible group in the hospital, charged with legislative policy, is the board of trustees; therefore they must be the policy makers.
- (2) The essential activity in the hospital is medical care for the sick, a specialty of physicians; therefore they should determine the policies of the organization.
- (3) The person most knowledgeable about all phases of life in the hospital, the only full-time professional with wide perspective, is the administrator; therefore he should decide policy.

"The governing board of the hospital is responsible for the formulation of policies governing its administration. For the execution of its policies it is obligated to appoint a fully qualified and experienced administrator"¹ and give him the authority to discharge his full responsibility as the executive agent of the governing board.

In a real sense the key measure of the capacity of a hospital to generate and use effective policies lies in the quality of the relationship between the board of trustees and the administrator.

The relationship of the medical staff to the hospital probably has no counterpart anywhere else. The physician is, for one, an agent of the patient. He determines which of the services or products offered by the hospital are to be purchased by the patient. He is also something of an employee of the hospital in that he will often operate departments or be responsible for establishing policies which greatly affect departments.

The job of the administrator is in large part a reflection of the nature of the hospital. Today's hospital is "one of the most complicated models of human organization which our society has evolved."² It is a series of related systems, with multiple goals, in which a delicate balance must be maintained.

The hospital administrator's role can be defined as the unique juncture of three sets of relationships in which he must lead the board of trustees while appearing to be led, he must guide the medical staff while appearing to be guided, and he must maintain basic principles of sound financial management and move relentlessly toward improved patient care. As such, the administrator is a central figure in the process of hospital policy making.

No one has a more influential position in setting goals, creating values or style, and devising ways of moving effectively toward the organization's particular ends.

He reports to a board of laymen, in whose hands rests the legal responsibility for policy determination, and the two most dramatically crucial groups in his hospital, the patients and the physicians, are beyond his direct control.

The real conflict in the administrator's role is that he must be the key, full-time executive without legitimate power either to make policy or to govern the medical staff. He is in a unique position. He has responsibility without commensurate authority. The model of no other institution fits quite well enough to be instructive or helpful.

One of the few generalizations to be made is "that the role is shaped by factors both external to and within the organization."³ The organizational authority in a hospital can be compared to an organization in industry having two vice-presidents, but no president.

For conflicting matters crossing organizational units, the problems must await solution until the vice-presidents present them to the governing board of that corporation. Such untimely delays in industry would result in the eventual economic failure of that corporation.

The central problem confronting the current hospital organization is the failure to invest in one person the authority of day-to-day control over all operations of the hospital.

Recommendation 1:

That hospitals be encouraged to develop along lines of proven industrial or-
ganizational structure where lines of authority to an individual known as president or executive vice-president for the day-to-day control of all operations are clearly defined.

HOSPITAL MANAGEMENT

The task force members believe that not enough attention has been paid to the importance of appointments to management staff. This includes organizational management and technical management personnel. Such appointments should consider the following:

Past "management" performance; use of accepted selection tools to determine qualifications and aptitudes for management.

In considering methods of increasing operational efficiency, the role of management must be included. It is management that must motivate, assess and reward for optimum performance.

Too often when management positions become vacant, appointments are based on service of employees in hospital duties or influence with or by the Board, without due consideration of the above-noted factors.

Task force discussions revealed such problems as the existence of ritualistic procedures in nursing and other departments, lack of direction in assigning overlapping responsibilities and the existence of operating standards set by professional associations for their members. This clearly indicates lack of management direction.

Decisions on the scope and extent of service to be provided must be made by top management in liaison with representatives of the medical staff. Department managers must then participate in decisions concerning how the service is to be provided on a planned basis within a mutually agreed upon financial budget.

Individual physicians using the facilities, especially since they initiate expenditures without responsibility for an efficient operation, must know the constraints and operate within management policies. This requires the existence of policies and the necessity of an information system to permit management to manage.

The above examples are cited to illustrate the need for and lack of effective experienced trained management personnel. The report on operational efficiency cannot include detailed recommendations on the techniques of various types of management. It can, however, note that the selection of appropriate management personnel is one of the most important factors in operational efficiency.

Recommendation 2:

That appointments to management positions be made by personnel competent to determine required qualifications for position and eligibility of applicants based on applicants' education, past record and basic aptitude as determined by available selection tools and procedures.

Recommendation 3:

That courses in hospital and health administration should give greater emphasis to management techniques per se.

SPECIAL SERVICES MANAGEMENT

Many hospital departments, particularly in the laboratories and special services, are headed up by highly trained specialists. While selected for their professional competence in their particular field, many have had imposed upon them the responsibility of day-to-day administration of their department which increasingly demands more and more of their time. This, in turn, takes away from their greatest contribution, that is, in the area of patient care and research. Few, if any, have had administrative training and yet are responsible for large budgets and administrative duties.

Recommendation 4:

That consideration be given to relieve professional department heads (i.e., Radiologists, Pathologists, etc.) of administrative details by development of management assistants.

INTERRELATIONSHIPS OF HOSPITALS

The Task Force on Operational Efficiency, reviewing the operations of hospitals, has observed that in many instances there is duplication of services and misallocation of resources to the needs of patients in hospitals brought about by the original desire of all hospitals to meet the total needs of their patients within the institution for which the board of trustees is responsible.

While in some instances this has led to major advances in medical science and outstanding levels of patient care, the Task Force on Operational Efficiency suggests that the all-too-apparent lack of group action of hospitals and the absence of initiative by boards of hospitals to establish interrelationships between hospitals on a large and desirable scale in meeting community needs are a factor in the loss of operational efficiency.

Recommendation 5:

That representatives of hospital boards within appropriate regions meet regularly to determine how hospital needs for the area can be resolved in the most effective and efficient manner. This common gain principle will not preclude the planned development of experimental or research units or projects.

Techniques of Implementation

It is, therefore, recommended that each board of a hospital within a region have a committee of their board meet with a similar committee of other boards to discuss areas of joint activity which can result in increased operational efficiency.

The task force suggests that among the items to be discussed could be the following:

- (1) Standardization of equipment and supplies within a region;
- (2) Cooperative purchasing by joint tender for items within a region;
- (3) The development of common accounting and financial reporting systems for the evaluation of joint services, such as, laundry, C.S.R., dietary, insurance purchasing, etc.;
- (4) Determination of expansion requirements and how these should be met to avoid unnecessary duplication;

(5) Other items presented by executive directors, or by provincial governments.

Where the boards of the institutions have met and are not able to discern on their own behalf areas that should be examined, or are unable to suggest more formal methods of meeting their requirements, it is recommended that each province have available a consulting group in the department concerned, voluntary hospital associations, medical associations or other knowledgeable groups, to review potential areas of joint activity so that the needs of the patients may be better met at a more economic cost without a negative effect on the individual responsibility of the hospital or on the levels of patient care.

Funds for this, should they be required, should be made available through the budgets of the individual hospitals and approved by the provincial budgetary system.

After legislation has made these groups operational, it would be of advantage if each of these groups were to have an evaluation of their activities undertaken.

The recommendations and discussion contained herein should in no way be taken as being the end object of regional planning, which, in the minds of this task force, might eventually include the development of a rational and balanced health care system, including public health, medical care and the whole range of health care institutions normally found within a community.

While efforts should be undertaken in this project area, this task force is of the opinion that the joint activities of hospitals outlined would be a starting step in this direction and, to the extent that these

would be successful, would be a major step in meeting the total concept of regional planning.

The argument may be presented that the development of a successful organization of groups of hospitals at this level to meet required joint financing or particular projects or the re-allocation of resources from hospital "A" to hospital "B" is at variance with the present budgetary system.

The task force recognizes that this is a technical problem only and that should the funds be required for joint activity, the techniques for which these funds should be arrived at, after the principle has been approved by the provincial government, should not be difficult to establish and may vary from province to province.

The final authority for accepting the recommendations of these joint boards lies with the boards of the hospitals, because if in the application of funds presently being made available to these hospitals there can be a saving in cost without any negative effects on the care of patients, this task force recommends that the savings of funds so generated for an agreed period of time be left with these joint boards for the development of other projects which meet with the approval of the provincial governments and which, otherwise, would not have been able to be funded.

In principle a dollar saved can be used to generate further savings within this group of hospitals.

USE OF ANALYTICAL TECHNIQUES

The Task Force on Operational Efficiency is concerned that productivity based on industrial management techniques and standards has not been utilized to maximize the contribution of resources allocated to the health services industry.

Consulting firms with hospital experience have indicated that effective productivity can be raised between 10-30 per cent by the use of work study techniques properly initiated and controlled. There are instances in which these techniques have been used effectively in large hospitals with a significant decrease in operating costs.

The Task Force also directed its attention to the demands of the medical staff and the consequent inefficient use of resources in the hospital. Studies by noted medical men recommend that sophisticated analytical tools be employed to determine and control the significant inefficiency associated with resource consumption demanded by medical personnel.

Recommendation 6:

That groups of work study personnel be established in each province to carry out work studies in hospitals and to insure that approved recommendations are implemented.

Recommendation 7:

That competent operations analysts, biomedical engineers, and other qualified personnel in data management and applied mathematics be employed to work with analysts to examine health service activities.

Technique of Implementation

A centralized group or groups of analysts should be constituted for the following:

- (1) To conserve and obtain optimum effectiveness of these highly trained personnel.
- (2) To carry out studies as requested.
- (3) To collect, store and utilize data to avoid duplication, waste of labour and establish a body of relevant experience.
- (4) To control quality of work done.

- (5) To rigidly control the selection methods of personnel, orientation and training both in-service and on-the-job. The selection of competent analysts is important and all pertinent available selection tools and procedures must be used.
- (6) Follow-up and servicing of work studies implemented be carried out at regular intervals to maintain and apply any improved methods.
- (7) To assist in formulating the basis for any incentive programs.

There is much more detail which could be added, and many more advantages can be derived from a central well-organized group of analysts. For example, all process planning could be carried out for centralized services such as laundries, central surgical supply, food services, etc. Amplification of the techniques follows.

It was demonstrated in the early part of this Century by men like Frank Gilbreth that by analyzing work performed in industry and breaking down operations into observable units, time values could be established more readily and thus the process being analyzed be improved through combination, rearrangement, improvement and elimination.

Techniques Used By Time Study Analysts

(1) Work simplification

Work simplification is the organized application of common sense to find better and easier ways of doing work. Perhaps operating room procedure can be used as an analogy where equipment, tools, personnel, supplies etc. are organized in such a fashion that part-way through the procedure it does not become necessary to stop and search for supplies.

(2) Stop-watch study

Briefly stated this technique is carried out with a stop-watch and is the timing of identifiable

units of work or activity which are recorded and pace-rated. Sufficient observations are taken until a standard of performance is derived.

(3) Work sampling

"Work sampling" or "random observation" studies are a series of instantaneous observations taken at random intervals of defined activities and delays.

It can be applied to the activities of people or machines. The percentage of observations recorded for a particular activity or delay is a measure of the percentage of time during which that activity or delay occurs.

There are several mathematical formulae used to determine when sufficient numbers of samples have been taken for a valid result.

(4) Predetermined time standards

Predetermined time standards are usually standards constructed in a controlled environment covering motions not able to be recorded by stopwatch or sampling; predetermined standards would also be pace rated. For example, standards have been set for manual and electric typewriters, and can be applied to a wide range of clerical activities.

Another form of predetermined standards are standards for any given activity and have proved valid through implementation and continued use. For example, housekeeping standards can be developed to new construction from the drawings.

(5) Performance rating

Performance rating is that process during which the time study analyst compares the performance of the worker under observation with the observer's own trained concept of proper performance.

(6) Scheduling

As work studies are completed the best utilization of labour in any given situation is the desired result. With the time study analyst taking major responsibility for implementing the findings in the initial stages, at least, it is the analyst's responsibility to ensure adequate control through the construction of suitable schedules.

(7) Other

Other benefits derived from the use of time-study techniques are as follows:

- a) Control of labour costs through staffing establishments.
- b) Provision to middle management personnel of training in scientific management techniques.
- c) Creation of a climate for more effective management.

From the foregoing brief description it is evident that with the techniques available to the well selected and trained analyst, most activities carried out in a hospital could be subjected to work study analysis.

It is vital that work study analysts working in a hospital setting have the ability to utilize all of the techniques described in the preceding section. From time to time several or all techniques described may be used in a particular study or, depending on a particular situation, only one approach may be used.

To illustrate why no restriction should be imposed on the areas to be exposed to work measurement analysis, the task force notes that the following departments and functions have been studied in one large Canadian hospital.

Housekeeping	Medical Records
Dietary	Laundry
Nursing	Transportation
Auxiliary Nursing Personnel	Clerical Routines
Central Surgical Supply	Printing.

To further illustrate the need to have work measurement techniques applied so that maximum benefits will be derived, the following table of expenditures for public hospitals in one province in 1967 by service is offered:

<u>1967</u>	<u>ALLOWABLE SALARIES AND WAGES PER PATIENT DAY</u>	
	<u>Total Patient Days - 13,351,652</u>	
<u>SERVICE</u>	<u>DOLLARS PER DAY</u>	<u>% of TOTAL</u>
Nursing Service (Nursing Units O.R. etc.)	\$13.57	49.5
Laboratory	1.81	6.6
Radiology	1.24	4.5
General Administration	2.01	7.4
Dietary	2.23)	8.1)
Laundry & Linen	.71) \$4.62	2.6) 16.9
Housekeeping	1.68)	6.2)
Operations & Maintenance	1.09	4.0
Other Special (Pharmacy etc.)	1.36	5.0
Medical Education	.56	2.1
Nursing Education	1.09	4.0
	<u>\$27.35</u>	<u>100.0</u>

To limit work studies to the "hotel" functions (dietary, laundry and housekeeping) is to severely limit the opportunities for cost reduction in hospitals.

Interestingly enough while most hospital administrators avoid nursing studies because it is felt

that nursing is too difficult to analyze, work done recently indicates that improvement in the supporting services to nursing, which are readily measurable, will yield substantial savings in nursing personnel. Changes in organization of support services will serve the additional purpose of isolating the nursing functions in such a manner that more intelligent studies can be carried out free of the encumbrances of clerical, housekeeping, supply and administrative details which presently severely cloud nursing responsibilities.

The task force has been advised by nursing personnel that support services to nursing must be reorganized.

The University Hospital Michigan, at Ann Arbor, has implemented a ward manager system over the past six years completely divorcing general administrative responsibilities from the nursing department.

Dr. Asa MacDonell's study under the Public Health Research Grant, Project No. 606-7-162, illustrates the degree of additional staff required in nursing when the supporting services are not organized as a separate function.

At one large Canadian hospital current reorganization of support services and work studies open the door to eliminating the auxiliary nursing category of ward-aide, at a substantial saving. Some of the personnel in the ward-aide category will be assimilated into the housekeeping aide group under the direction of the ward manager.

Funds must be made available to assist the reorganization of support services and to hire competent ward managers as one of the first steps in creating a climate for better management of nursing resources.

Accepting the premise that there is a significant problem associated with the conservation of

resources by the medical staff, steps must be taken to implement new methods whereby the consumption of resources can be qualitatively assessed.

Indications are that the conservation of resources can be effected through:

- (1) A more rational approach to the form of the medical record.
- (2) The way in which the medical staff utilizes the medical diagnostic and therapeutic facilities.
- (3) Increased use of auxiliary health personnel with specialized training.

Techniques aimed at changing direction, emphasis, and quality of patient care have been developed by Dr. Larry Weed at Cleveland and Dr. Gabrielli at Buffalo.

Dr. Weed's techniques have had some influence on practising physicians in the United States and Canada, involving about ten thousand active treatment beds.

The techniques being employed by Doctors Weed and Gabrielli should be studied in more detail, with regard to the problem oriented medical record.

In Canada a good deal of effective work has been accomplished regarding diagnostic facilities. This is substantiated by documentation available in connection with Public Health Grant 605-7-363. A progress report was submitted at the November 1967 meeting of the Ministers Committee on Health Insurance and Diagnostic Services, in the form of a compilation of Health Sciences Delivery Systems - Analytical Techniques. This document contains the nucleus of the requirements of the methodology to effect qualitative measurement of resource consumption in Hospital Laboratories.

The studies carried out in the Out-patient Department and Laboratories of the Toronto General Hospital between 1963 and 1965 concerning laboratory

resource consumption by physicians, and the conclusion, are noted.

The task force is optimistic about the structure of the Toronto Institute of Medical Technology which is presently being formed. The Institute is comprised of multi-disciplinary components of Medical Engineering, Operations Analysis, Data Management, and Applied Mathematics, which when fully developed will provide a consulting and service function to Health Service activities.

Incentive pay is a bonus paid for work performed in excess of an agreed-upon performance standard which meets quality control specifications. Basic standards of performance in most positions in a great many hospitals have not been defined so there appears to be little basis on which incentives to hospital workers could be paid at this point in time.

We should not ignore the considerable experience industry has had with incentive programs, and the fact that even where reliable standards exist, they require a good deal of administrative expense to control. It would be more difficult in a hospital setting to develop precise and objective quality control mechanisms.

Much interest has developed recently about an incentive program initiated in Florida. There is lack of evidence concerning objective quality control, and there are indications that incentives were being paid for performance above the level of fifty-five percent productivity.

From industrial experience it has been determined that effective productivity rates of 80-85% can be maintained without incentives. With incentives effective productivity rates of 120-130% can be reached and maintained.

Work measurement programs in hospitals competently implemented and managed have attained and maintained 80-85% effective productivity. Therefore, the task force would not consider paying incentives for performance below established norms.

Assuming that universal operating standards for hospitals can be developed through the use of analytical techniques, two types of incentives could be considered.

- (1) Wage rates of hospital workers should at least equal the norm paid in industry, where it can be demonstrated that effective productivity prevails.
- (2) Where it can be demonstrated that a hospital is operating efficiently and effectively, a portion of savings be returned to the hospital by the paying agency. The effect of this type of incentive would be used to reward management performance and enable hospitals to recruit capable managers competitively.

ACKNOWLEDGEMENT

The Task Force wishes to recognize the assistance of several companies and individuals who have contributed substantially to the compilation of this section of the report.

Considerable documentation has been gathered to support statements made herein and have been filed with the Secretariat.

SCHEDULING

When one views the hospital as an institution that produces service, conventionally either a production line or job shop model is used. The production line model is generally inappropriate to hospital conditions, particularly if one takes the patient stay, from pre admission to post discharge as the unit of processing.¹ The best fitting model for the total hospital processes associated with patient care seems to be the job shop.

Scheduling Productivity

To gain maximum value from resources (personnel, facilities and material) used to provide a product it is necessary to be able to schedule these resources efficiently. Control arrangements must allow for an economical response to the wide demand variations which are found in most production situations.

It was possible, a number of years ago, to improve the efficiency of producing manufactured items which were amenable to production lines because of the comparative simplicity of establishing schedules for identical treatment of uniform parts. Until recently it was next to impossible to do the same thing for items or units of service requiring a unique, or nearly unique, combination of processes.

Recent Opportunities

Advances in applied computer techniques have made it possible to greatly simplify the problems of using mathematics to schedule complex activities under job shop conditions. The Fairfield system², as an example, was applied to a shop which includes 1,000 machine tools distributed over 26 work supervisors. A 5 to 10 percent gain in output and a 30 percent reduction in lead time have been attributed to it. It has also

been claimed that the accurate prediction of completion time has been increased from 60 percent to 78 percent.

Hospital Problems

Hospitals are faced with a similar problem with respect to the need to improve output for a given input. From the patient's point of view lead time (length of stay) should be reduced to a minimum. Hospital efficiency requires improved precision in forecasting the length of stay of patients in hospital.

The thousands of individual acts which are needed for patient care require many scheduling decisions. Most of these decisions include the allocation of staff and material. The location of the patient also forms part of many of these decisions.

Humans are poorly equipped to make scheduling decisions in rapid succession as they can only take into account 2, 3 or possibly 7 of the 50 or more factors which are involved in many scheduling decisions. As a result both the human resources and facilities devoted to providing hospital care are often under-utilized. Really worthwhile improvements in this regard can be achieved now, but with the assistance of a computer even greater gains can be realized.

Unfortunately, to date, there have not been any positive results of work done on this problem.

Recommendation 8:

That favourable consideration should be given to any worthwhile applications for applied research funds for a project which makes a serious attempt to conduct a total scheduling systems study.

COMPUTERS

The task force members noted that a tremendous amount of publicity and interest has developed concerning the possible use of computers in hospitals. They also realize that in discussing the subject and reviewing the literature, it is difficult to divorce fact from opinion.

There is no doubt that the computer will play an important role in hospitals in the future. It should play this role when the obvious solution to specific problems which have been proven to exist, requires the use of a computer. In business applications it must be economically feasible and in others, such as medical applications and information handling there must be improvement in service.

The computer is a sophisticated tool requiring the existence of high quality leadership with ability to use data effectively in increasing operational efficiency. Its use requires qualified people dedicated to specific applications. When a computer is acquired as the solution to poor management and ineffective manual systems, the problems are compounded.

In considering the role of computers, it must be recognized that because qualified human resources are scarce there is a need for sharing and avoidance of duplication of effort. Sharing necessitates standardization and systems studies which in turn require the good will and co-operation of those sharing the service. This is often the biggest obstacle to effective use.

Recommendation 9:

That a computer applications advisory group representing the various parties responsible for health care be set up in each province to assess computer proposals and co-ordinate efforts to avoid duplication and ensure best use of available

resources. Representatives of the various provincial groups should meet periodically to exchange information and take the necessary steps to keep informed of developments in this field.

FINANCIAL MANAGEMENT

The task force recognizes that under the insurance plan, where actual operating costs are paid, there is a lack of incentive to hospitals to materially improve operating efficiency.

Recommendation 10:

That to encourage hospitals to apply industrial techniques, and where funds are required to initiate and carry out studies to effect operating savings, the funds be provided on an amortized basis with at least a portion of the savings retained by the hospitals. Where no net savings result from the expenditure of funds for studies, the costs would be borne by the hospital.

Recommendation 11:

That consideration be given to provide monies for capital expenditures for nonsharable equipment where it can be proven that such expenditures will be offset by operating costs savings.

Recommendation 12:

That where it can be established that operating costs can feasibly be reduced by purchase of sharable capital equipment, hospitals be allowed to purchase this out of the operational cost savings indicated without any changes in the cost reimbursement formula pertaining to depreciation.

Under the insurance plan the provision of working capital is a responsibility of each hospital.

With steadily increasing costs the available funds for current operations, for the initial purchase cost of minor equipment, and for minor capital improvements, are inadequate.

Recommendation 13:

That each province assess the need to advance the timing of monthly operating payments to reduce the gap between the actual expenditures and their reimbursement.

In order to avoid the use of expensive acute care hospital beds by "semi-ambulatory" patients, the trend is developing to refer more and more patients from the rural areas for "diagnostic work-up" to the large hospitals in the metropolitan areas (and this is encouraged by some provincial governments). This could result in a reduction of capital expenditures for construction of additional bed facilities.

The present federal legislation does not allow for cost-sharing of the room and board expenses of such patients, and these patients, in most cases, are not financially able to pay hotel or motel bills for periods of several days, in addition to their travelling expenses. Normally, hospital funds are not available for this purpose.

Since the above mentioned trend is desirable for many reasons and is in line with future emphasis on preventive medicine, a way has to be found to cope with this financial problem.

Recommendation 14:

That federal legislation be amended to allow for cost-sharing of minimum room and board expenses for semi-ambulatory patients.

Recommendation 15:

That the provincial authorities set reimbursement rates for those hospitals that can provide such hotel/motel type accommodation, which is a distinct possibility where the operations of hospital-based schools of nursing care presently are being phased out.

The timing and method of approval of hospital operating budgets by provincial authorities has an effect on hospital operating efficiency. Approved budgets are often received by hospitals months after the beginning of the period to which the budget applies.

Recommendation 16:

That hospital operating costs and particularly salary ranges be approved and hospitals notified prior to the period under review. For their part, hospitals must submit for approval projected costs for new programs prior to the submission of the annual budget.

Recommendation 17:

Continuing studies should enable the provincial authorities to maximize the determination of spending priorities by hospitals within overall budget approvals.

Many hospitals have an existing severe capital indebtedness requiring the use of funds for repayment which would normally be used to up-date equipment, and to maintain sound financial management and operating efficiency.

Recommendation 18:

That provinces continue to assess the capital indebtedness position of hospitals and assist those where financial problems inhibit operating efficiency.

PERSONNEL SERVICES

The task force, in reviewing the position of hospitals in regard to personnel services, expressed the opinion that there appeared to be a division of authority in personnel matters, between what could generally be regarded as professional staff and general service employees.

One member of the Task Force noted that a review of issues of the magazine "Canadian Nurse" indicates many of the advertisements for nursing personnel requested that interested parties reply to the Director of Nursing, and not to the personnel service of the hospital. This was also noted to be the case with many other paramedical personnel.

The task force believes that properly developed and operated personnel services should materially contribute to the better selection of employees within the hospital and quite possibly, a lower turnover amongst hospital employees. One study undertaken on the cost of staff turnover indicated a cost of \$525 per termination.

Recommendation 19:

That all hospitals over 150 beds
in size employ full-time specialists
in personnel services.

Implementation

The task force believes that in the development of a personnel service within hospitals, all personnel activities, regardless of whether they are for professional personnel or general service personnel, should be centralized within the one service. It is believed that there must be a considerable number of professional nurses in highly paid administrative capacities performing routine personnel management functions.

Inservice education programs should also be undertaken by personnel services. It is considered desirable by the task force that overall hospital inservice programming be co-ordinated and where feasible operated by the personnel service function.

In developing the personnel service, the task force believes that the following functions should be assigned to that department:

- (1) The Recruitment of Employees
 - a) Determining and developing sources of supply
 - b) Advertising
 - c) Screening of job applicants
 - d) Referral of suitable applicants to the department heads
 - e) Testing of prospective employees
- (2) Orientation and Induction
 - a) Orientation to the hospital
 - b) Training for the position
 - c) Evaluation of employees during probationary periods
- (3) Hospital Safety Programs
 - a) Investigation of all accidents within the hospital
 - b) Promotion of safety programs
 - c) Establishment of a safety committee
 - d) Recommendation to administration re safety devices
- (4) Collective Bargaining
 - a) Preparation for negotiations
 - b) Participation in negotiations
 - c) Participation in grievance procedures
- (5) Establishment of Administration Controls
 - a) Establishment of position control systems with necessary management reporting
 - b) Maintenance of all records relating to personnel

(6) Employee Services

a) General administration of:

- i. Wage and salary programs
- ii. Pension plan
- iii. Medical care insurance plans
- iv. Vacation programs
- v. Employee health program

b) Origination and participation in employee programs

- i. Recreational
- ii. Social

c) Participation in labor management committee if one is developed within the hospital.

NURSING SERVICE IN HOSPITALS

One of the prime areas of concern of this task force has been the nursing service department. It is recognized that there are weaknesses and problems existing within the nursing service department of most hospitals which decrease operational efficiency and increase the cost of the delivery of nursing care to patients.

There appears to be ineffective management of nursing service in the majority of hospitals. In many instances there has been a failure to apply sound business principles and practise modern management techniques in the administration of this department.

Many nursing service administrators lack the preparation for their positions. Although some have academic preparation, they do not have adequate knowledge of modern methods of business administration, personnel administration, and industrial techniques. They have a very limited understanding of the total health services and their interrelationships.

There has also been a failure on the part of some hospital administrators to provide the necessary leadership and support for nursing service administrators, either because of lack of ability to do so or failure to accept this responsibility. Weakness in top management tends to permeate down through the organization.

Recommendation 20:

That nursing service administrators should be prepared through educational programs and experience for the position of management of the nursing service department.

Implementation

Universities now offering nursing service courses should be approached and asked to review their programs to make sure that there is sufficient content

in business administration, personnel administration, management of nursing care, industrial techniques, systems analysis, hospital administration, etc.

Persons now occupying positions of nursing service administrator who are not adequately prepared for their positions should be encouraged and assisted to get the necessary preparation within a reasonable length of time. Should the individual make no attempt to obtain this preparation, he or she should be replaced when a qualified person is available.

Hospital administrators need to be prepared to assist the nursing service administrator in applying modern management techniques in nursing service.

The nursing service department is responsible for the expenditure of approximately 50% of the hospital personnel budget and yet there are no acceptable objective standards for evaluating the quality of nursing care or for measuring the productivity of nursing personnel. There is no adequate system for determining the numbers and categories of nursing personnel required to deliver nursing care to patients. This is not conducive to cost saving efforts.

The traditional structure of the nursing service department no longer forwards the objectives of nursing service or contributes to the efficiency of the department. The structure was appropriate when nursing students were the major providers of nursing care. This is no longer true and some positions are supernumerary. There are too many levels in the administrative structure.

Recommendation 21:

That objective standards for nursing care should be established.

Recommendation 22:

That a method of measuring the quality of nursing care should be developed.

Recommendation 23:

That criteria for measuring the productivity of individual nursing personnel should be established.

Recommendation 24:

That job standards for each position in the nursing service department should be clearly outlined.

Recommendation 25:

That an evaluation of the quality of nursing care and performance of individual personnel should be done at regular intervals.

Recommendation 26:

That the nursing service department should be reorganized to reduce the number of categories and the levels of supervisory or administrative personnel. Orderlies should be prepared to the level of registered nursing assistants. The clinical nursing specialist should be introduced. She should be directly responsible to the director of nursing and have a staff relationship to other nursing personnel. She would not be responsible for the administration or management of the unit but she would be responsible for assisting other nursing personnel to assess the patients' needs, plan care, and execute the plan. The addition of this person will improve the quality of patient care.

Recommendation 27:

That determination of the numbers and categories of personnel required to meet the needs of patients be done in a systematic way to ensure the most effective, efficient and economical use of all nursing personnel.

Implementation

Financial support should be given to appropriate groups to establish standards and develop methods of measurement of nursing care. Techniques used by time study analysts should be introduced in establishing the foregoing.

Consulting groups outside the hospital should assist in identifying problems in the nursing service department, develop recommendations, and provide assistance in implementing the recommendations.

To determine the number and categories of nursing personnel required to meet the nursing needs of patients, timing studies should be done. This would be a further study to "Timing Studies of Nursing Care in Relation to Categories of Hospital Patients" by MacDonell, Brown and Johansson, including the analysis of the nursing needs of patients and simulation to determine the time required if the nursing needs were to be met, i.e., the numbers and categories of nursing personnel required to give nursing care to patients.

The fewer the categories of nursing personnel in the nursing unit, the less fragmented will be the care given to an individual patient.

Research projects in staffing patterns are presently in progress, and others will be carried out in the near future. Results of such projects should be shared on a national basis to avoid duplication of studies and to enable nursing service departments in all hospitals to organize for the most effective utilization of nursing personnel.

There need to be better planned and more continuing educational programs for nursing personnel in all categories so that they may keep up to date, increase their knowledge and skill, and become better prepared for more responsible positions.

In many hospitals, nursing personnel are spending significant amounts of time in activities that should and could be carried out more effectively by other departments.

In a series of functional nursing activity studies, nursing personnel were found to be spending from 15% to 39% of their time on non-nursing activities. These are activities related to supply, dietary, house-keeping, laundry, pharmacy, laboratory, x-ray, admitting, medical records, general administration, etc.

Some activities such as drug dispensing, housekeeping and admitting, accepted as the responsibility of the respective departments at certain times i.e., during the day Monday to Friday, fall on nursing during the evening and night, weekends and holidays.

There has been reluctance on the part of some administrators to extract "non-nursing" duties from nursing service since there is frequently no reduction in the number of nursing personnel assigned to the nursing unit.

Removing such activities from the responsibility of nursing personnel does not necessarily mean that time will be saved. In some instances it will result in time being used more effectively for improved nursing care. When nursing personnel are spending time on activities mentioned above, the patients are usually receiving nursing care which is diluted in quality and quantity.

It has been shown that in one hospital when supplies from departments such as central stores, central sterile supply, linen room, and stock drugs from pharmacy were placed on complement, without requisition, delivered and picked up by the supplying department, that

these departments were pleased with their new system, were better able to organize their work and did not have to add staff.

It is difficult to carry out meaningful studies in relation to the effective and efficient utilization of nursing personnel when personnel are responsible for clerical, housekeeping, supply and other such functions.

One of the main reasons for the existing situation is probably the lack of clearly defined departmental objectives and functions. In addition, some hospital administrators do not seem to understand the problems and needs of the nursing department. However, it must be recognized that there is sometimes a reluctance on the part of some nursing personnel to release these functions.

Recommendation 28:

That the objectives and functions of each department within the hospital should be clearly stated and each department should be responsible for carrying out its functions.

Recommendation 29:

That the services supporting nursing be reorganized to increase efficiency in the delivery of nursing care to patients and so that the needed supplies and equipment i.e., food, drugs, sterile supplies, linen, etc., are available at the time needed, in the place needed and in the most usable form.

Implementation

Department heads must know and understand top management's objectives.

Policies need to be clearly stated. The hospital and each department within it must have clearly outlined objectives, and must know what are their functions and relationships with other departments

and agencies. There is a need for better planning, co-operation and co-ordination of all hospital services if the optimum in patient care is to be achieved.

There is mismanagement of nursing resources. Nursing manpower is wasted in several ways. Too many registered nurses are being utilized in areas where they are not needed, i.e., central sterile supply department, admitting office, pharmacy, laboratory, etc. Fewer registered nurses would be sufficient in operating rooms.

A considerable amount of time is wasted in ritualistic or traditional activities without regard for patients' needs, i.e., taking temperatures three or four times daily on every patient regardless of whether or not it is necessary, changing bed linen on every bed daily even though the patient may have occupied the bed for only a few hours.

Present methods of staffing nursing units are not satisfactory. Most nursing units are staffed on a yearly basis for maximum nursing care load. This results in overstaffing during slack periods.

Present admitting policies also create problems in staffing. Assignment of patients to nursing units is poorly balanced, which tends to create an excessive work load in one nursing unit, while at the same time, another unit may experience a noticeable reduction in amount of nursing care required.

Recommendation 30:

That Registered nurses not be employed in central sterile supply department, admitting office, pharmacy, etc., because they are not required there. Should a hospital continue to employ nurses in these areas, these nurses should be regarded as staff of that department, not of the nursing service department. The number of registered nurses in operating rooms should

be reduced and operating room technicians employed.

Recommendation 31:

That nursing care be planned on the basis of an analysis of the individual patient's needs, not on "routine" or traditional practices. This would tend to eliminate activities done on a ritualistic basis, save nursing care time, and probably lead to more equitable staffing on days and evenings.

Recommendation 32:

That nursing units not be staffed for the maximum nursing care load. Personnel should be employed as required to take care of an increased nursing care load.

Recommendation 33:

That admitting policies and procedures be reviewed and changed when advisable to provide for more equitable distribution of patients to nursing units.

Implementation

There would need to be a review of operating room technician courses to ensure that these are sufficient to prepare enough technicians to staff operating rooms. If necessary to meet the need, the number of these courses would have to be increased.

There needs to be better staff education for direct nursing care personnel in the area of planning and evaluating nursing care.

The average nursing care load per unit could be established by doing "Level of Care Assessment". This should be done daily in order to realistically identify areas where staffing ought to be augmented to meet the nursing care needs of patients.

There is a high turnover rate, which is costly in terms of orientation and staff education, and which affects productivity and decreases operational efficiency. It has been estimated that it costs an average of \$500.00 per hospital employee termination.

In 1967 the turnover rates for Canadian hospital nursing personnel were as follows:

	<u>Public Hospitals</u>	<u>Private Hospitals</u>	<u>Federal Hospitals</u>
Directors	18%	12%	15%
Supervisors	16%	13%	14%
Head Nurses	16%	44%	16%
General Duty Nurses	60%	43%	49%
Nursing Assistants	43%	45%	63%
Orderlies	47%	45%	26%
Other nursing personnel	41%	33%	29%

It is noted that the higher turnover rates are in the direct nursing care personnel. Some of this is inevitable due to marriage, child bearing and transfer of spouse. Other causes of turnover seem to be lack of job satisfaction, as the registered nurse cannot practise as a professional nurse; awkward nursing hours; limited opportunity to advance in status and salary; and no reward for excellent performance, etc.

Recommendation 34:

That there should be greater effort to reduce turnover rates by giving general duty nurses an opportunity to use their knowledge and judgment, granting salary increments according to standards of performance, not by years of service only, and better personnel policies. A contract with each staff member for a minimum period of service should be given consideration.

Implementation

It would seem that a study into the reasons for the high turnover rates for nursing service personnel would be worthwhile. When some of the above recommendations have been put into effect, there should be a noticeable reduction in turnover rates if the reasons frequently given for resignation, such as inability to use knowledge and skills, too much paper work, no reward for good performance, etc., are valid.

If the suggested recommendations could be implemented it should result, in some instances, in a saving of dollars, and as well, improvement in the quality of care for the dollars presently being spent in the delivery of nursing care.

DIAGNOSTIC SERVICES - RADIOLOGY, CLINICAL LABORATORIES
AND OTHER

The diagnostic services in hospitals within Canada range from those that are using relatively simple techniques to those with highly sophisticated procedures. The demand for these services has increased greatly in recent years and the task force is of the opinion that it will continue to increase.

The development of automated equipment has permitted many of these departments to increase their volume without a corresponding increase in staff, but with a higher capital investment than heretofore, particularly in radiology. The development of this equipment has permitted hospitals in some instances to reduce the level of their staff who are using automated equipment but with an increase in the level of the staff who are required for supervision.

Because hospitals render a totality of services to the community ranging from in-patient to out-patient and research, the volume of these services cannot be related to beds or patient days.

Hospitals to a large extent meet the emergency needs of the community while private facilities do not do so. As a result, standby services are found in hospitals as very few private facilities remain open after 5 p.m. or on weekends.

Because of the need for the information produced by these services in the determination of diagnosis and treatment, delays in carrying out the test or in transfer of information may extend the length of stay of patients in hospital. As a result, scheduling and optimum utilization of diagnostic services is essential.

In summary, the problems facing the diagnostic departments are:

- (1) increasing demand for services;
- (2) continuing shortage of adequately trained personnel;
- (3) the introduction of high cost capital equipment because of newer techniques;
- (4) standby costs in relation to community services; and
- (5) the effectiveness of service to eliminate unnecessary stay in hospital.

Recommendation 35:

That recognition be given to the standby costs associated with diagnostic services.

Recommendation 36:

That hospitals be charged with the development of a scheduling program so that there be no undue delay in providing the service.

Recommendation 37:

That equipment be standardized within hospitals and preferably within regions so that servicing can be better achieved.

Recommendation 38:

That re-examination of the usefulness of routine tests be undertaken to determine their effectiveness.

Recommendation 39:

That recognition be given to the changing levels of professional expertise required in hospitals and that there be a proper re-allocation of duties to other categories.

Recommendation 40:

That cost effectiveness of each institution's duplicating equipment not being used to its optimum be noted and that coordination between hospitals be undertaken.

LAUNDRY AND LINEN SERVICE

The lack of standardization of linens in hospitals results in higher manufacturing and distribution costs, less opportunity for effective centralized purchasing and complicates the cleaning and distribution of linen by central hospital laundries.

The task force members believe agreement by hospitals on a regional or provincial basis upon size and material of linens would significantly lower operating costs and increase operational efficiency.

Recommendation 41:

That through group action, hospitals adopt on a regional or provincial basis standard linen material and size to facilitate specifications of manufacture and distribution. The possibility of centralized purchasing and the feasibility of central laundries should also be studied by the group on an area basis.

General Comments

The use of standardized linens in hospitals can be beneficial in many areas. The fact that the mills can schedule their looms for long runs will reduce their set-up costs, and the saving may be passed on to the consumer. Both mills and linen suppliers can warehouse larger inventories that will facilitate deliveries and reduce the amount of high priced storage space required at the hospital.

Centralized purchasing for a group of hospitals could take advantage of their volume buying power to increase competition among the suppliers.

Standardization would eliminate many special items peculiar to any one hospital and which are presently being manufactured in the linen room of the hospital. Once a standard is agreed upon, hospital linen supply

houses would be able to competitively market such items. Elimination of the manufacture of these so-called special items will reduce the labour costs in the linen room and will also reduce the capital expenditure for equipment.

Due to a variance in size and thread count, as many as sixteen different variations of the common adult-bed sheet were found to be in use in one group of hospitals. Selection of the type or size of linen to be used in a hospital may be made by the administrator, director of nursing, housekeeper or laundry manager. In many instances it becomes a case of personal preference or the selection may be influenced by experience gained in other hospitals. Such items as operating room drapes may be influenced by the personal preference of the medical staff. A definite standard, based on the best experience available, could eliminate many such variations.

Once linen standardization is achieved, it is but a short step to identification by the use of coloured materials, or coloured tracers in the hems. This will greatly increase the speed of handling during the laundry operation with a resultant decrease in labour costs.

Linen standards are a necessity in the field of centralized or regional laundries. The amount of labour required to batch wash for each hospital and return each item to the hospital from which it was received is enormous.

Standardization allows maximum use of equipment capacities, delivery containers and delivery vehicles. The resultant decrease in the number of categories will greatly reduce the labour cost of both pre and after sorting.

"Permanent press" and polyester cotton blended materials are slowly gaining acceptance in the

institutional field. The continuing advances being made in the technology and manufacture of these materials make their use exceptionally attractive.

The term "permanent press" implies a finishing technique whereby a blend of man-made fiber and cotton is impregnated with a resin and set into a "shape" with the application of heat. As the manufacturer states, it gives the material a built-in memory which causes it to return to its original shape after laundering.

At this time this might be termed a disadvantage. Hospital laundering techniques are designed around high-heat washing formulas which do much to kill bacteria. Unfortunately, in many cases this will remove the resin from the permanent press material in which case the finished article leaves much to be desired in terms of quality and neatness.

However, the use of polyester cotton blends can contribute to considerable savings for the institution, especially in the field of garments or uniforms.

During a recent test program conducted at an Ontario hospital it was proved that the life expectancy of the 65% polyester and 35% cotton blend is at least twice, and well might be four times, that of 100% cotton.

At this time, the polyester cotton material is one third more expensive to buy than all cotton, however, it is expected to become comparable as the demand increases.

In the average hospital laundry, to process 60 cotton uniforms per hour through the finishing department would require three skilled female operators, approximately \$15,000 in equipment, and 500 square feet of floor space. With polyester cotton, one unskilled operator, one \$8,000 piece of equipment, and 40 square feet of floor space will produce the same 60 pieces per

hour. Also, with the addition of one additional machine, the same operator's output can be increased to between 120 and 150 pieces per hour. As can be seen from the above, the potential saving in the finishing area alone is phenomenal.

The linen supply industry, during their tests, were exceedingly impressed by the fact that the mending required on the 65/35 blend is only 15% of the amount normally required for 100% cotton material.

In a 100% cotton uniform, the colour starts to fade from the first wash, but studies have shown little loss of colour after 60 launderings of the blend, which is well past the life of the average cotton garment. Stain treatment has proved to be no more difficult with the blend than with 100% cotton.

Through the use of thermo-setting resins during the finishing of the fabric at the mill, shrinkage has shown to be practically non-existent.

The studies have produced many favourable comments from both wearers and observers alike on the quality of neatness and comfort.

The central or regional laundry can reduce the cost of this service to a group of hospitals under certain circumstances.

The theory is that if sufficient volume can be amassed to be able to take advantage of the most modern laundry machinery and materials-handling equipment available, automation can be achieved to the point where the reduction in labour costs (which are 75% of the operating costs of an in-hospital laundry) will be sufficient to offset the capital investment.

Feasibility studies have brought to light the fact that the minimum required volume for central laundries is in the vicinity of between five and six million pounds per year, and this in a fairly confined area.

In sparsely populated areas where the hospitals are small and at a considerable distance from each other, it is the exception rather than the rule that sufficient poundage may be accumulated to make such a project feasible.

Many opinions have been and are being expressed on the subject of replacing all or part of the existing hospital linen with a type of disposable material. To date, any appreciable use of such a material has increased costs over re-usable materials. Conflicting reports from medical and nursing personnel have done little to clarify the advantages or disadvantages of these materials versus linen. Disposables may be used to some advantage as an emergency stopgap replacement, especially in the field of operating room packs. They might also have a place in the small hospital where the number of surgical procedures is minimal.

DIETARY SERVICES

The task force, in reviewing the dietary function within the hospital was impressed by the fact that food costs per meal day as reported by hospitals to the Dominion Bureau of Statistics and the Department of National Health and Welfare, have not shown the same degree of increase as demonstrated in many other areas of the hospital operation.

Although it is recognized that savings in raw-food costs may be realized or increases forestalled by food purchases on a centralized basis, the task force considers that this would be accomplished by regional coordination.

The task force met with, and examined in some detail, the proposals of private contractors in the food service industry. Although these firms have a program to offer, the task force considers this to be essentially

a management service and one that should be considered in those hospitals experiencing difficulty in retaining competent dietary personnel.

The task force also reviewed a report on the purchase and use of meats by various departments of the Canadian government. This report recommended that government departments purchase and use meat products in prefabricated form, extended in many instances to individual portion controlled items. Savings can be realized from lower total meat costs, elimination of excess staff in the kitchen, and elimination of the need to replace certain equipment and facilities.

Recommendation 42:

That hospitals in metropolitan areas review carefully all developments in the food service field within their area before embarking on large scale changes to their dietary service.

Recommendation 43:

That hospitals outside metropolitan areas develop a system of consultation by competent dietitians and others.

Implementation

The task force has recognized however, that certain new developments now taking place in the centralization of dietary facilities through the commissariat system might offer significant savings to hospitals in metropolitan areas. As yet, no fully operative commissariat system has been instituted for any hospitals in Canada. The task force does believe however, that the development currently proposed by one of the food service firms in the Metropolitan Toronto area should be watched very carefully as it may be able to provide prepared food at a very competitive price for hospitals in that area. Hospitals within metropolitan areas who are considering changes to their dietary systems are

urged to adopt a "go slow" approach, as industry representatives appear to believe breakthrough in the commissariat system and convenience food systems are imminent.

For those hospitals beyond the metropolitan areas, the task force has agreed that some system of consultation by competent dietitians and others, should be developed on either a provincial or regional basis. If the task force's recommendation regarding regional groupings of hospitals is adopted and implemented, dietary consultant services should be provided on a priority basis.

An interesting addendum follows.

PROCUREMENT OF MEAT SUPPLIES BY GOVERNMENT
DEPARTMENTS AND AGENCIES IN PREFABRICATED FORM

Purpose

To examine the advantages to Federal Government Departments and agencies of the procurement of meats in a prefabricated form rather than the present (and traditional) carcass and bulk form.

Scope of Study

From sample figures supplied by seven Federal Government Departments which regularly buy meats in bulk form, the 1967 purchases were estimated at:

Beef carcass	7,271,000 lb.	\$3,487,500
Veal carcass	726,000	440,500
Pork carcass	447,000	165,500
Lamb carcass	183,000	86,500
Bacon slab	1,127,000	564,000
	<hr/>	<hr/>
	9,754,000	4,744,000

These figures do not include all meats purchased but only those in bulk form with which this study is concerned.

Some of the figures from a D.N.D. test on a similar study project late in 1966 were made available

to the survey team. A visit was made to a small self-contained C.F.B. unit to observe their bulk feeding at first hand.

Tests and experiences were gathered from meat processors, institutions and associations concerned with hotel, restaurant and institutional feeding, and the conclusions are based on these findings.

Observations

1. Cutting tests results gathered from various sources indicate that 25 - 30% of the weight of carcass beef is waste or inedible. This is the bone, fat, inedible membrane and cartilage that are removed in preparing meat for cooking. It does not include further trimming and waste in serving nor that which is trimmed off by the diner. With the possible exception of a few bones used for soup stock, this waste has no value to the kitchens but rather adds to the volume and cost of garbage disposal. At the meat processing plant these by-products have a value which may or may not be equal to the cutting labour depending on the prevailing markets for them.

2. Beef is normally shipped to Government agencies in quarter carcass form, each quarter weighing approximately 125 pounds. These quarters are very irregular in shape so that they do not lend themselves readily to palletizing and mechanical handling excepting by trolley hooks on overhead rails and a great deal of manual labour is required to put the beef on the rail and remove it therefrom.

Purchase of beef in pre-cut-oven ready or portion control form would reduce the weight handled by not less than 25%, or in the case of 1967 beef purchases of 7,270,000 lbs. the weight saving is 1,820,000 lbs. In addition to the bulk saving in weight, the beef would be in cartons suitable for palletizing, conveying and simple

mechanical handling, resulting in a direct saving in handling labour at receiving kitchens and intermediate supply depots where applicable.

3. Beef in quarters is normally shipped with no wrapping or the minimum protection afforded by a kraft paper bag and light weight stockingette. On receipt at the purchasing institution this wrapping is removed. The meat is therefore unprotected and subject to dehydration and shrinkage which tests indicate runs to half of one percent (.5%) per day.

As this shrink is relatively constant from the conclusion of the initial chilling until used, the buyer assumes the loss from the time of shipment until prepared in the kitchen. Assuming weekly deliveries, a carry-over of some cuts for aging and an average shipping time of two days, a shrink of 3% to 5% or an additional loss of 250,000 to 350,000 lbs. is estimated.

By contrast prefabricated meat is generally packed in cartons lined with wax or polyethylene, or in vacuum packaging which is estimated by some sources to reduce shrink by 60% or a saving of 150,000 to 210,000 lbs.

4. At the packinghouse level the labour required to convert carcass beef into boneless form is about 1.6 man hours per hundred weight. This is on a production line basis using commercial meat cutting equipment.

This productivity level could not be attained in a kitchen using less efficient equipment and working on a more broken production schedule. This could decrease the efficiency 50% to 3.2 man hours per hundred weight. Studies at retail level confirm that labour efficiency is less than 50% of that at a processing plant.

The Canadian Restaurant Association estimates a production efficiency of meat cutters and cooks in the

food service industry as only 50% due to time spent in non-productive activity and waiting. This non-productive time added to the decreased efficiency of scale could raise the net labour utilization or labour costs in meat cutting to 4.8 man hours per hundred weight or 3 times that existing in meat processing plants.

With skilled cooks and butchers being at a premium, reduction of this portion of the food preparation costs at the kitchen level by transferring to the processing plant level is economically sound.

The reduction in handling of purchases and reduction of waste and garbage handling will further result in economies in less skilled kitchen help.

5. Purchase of precut and/or portion controlled meats has a further advantage in making available the best selection of the cuts desired for the menus recommended and for uniformity in the food prepared for any one meal.

Bulk purchases forces the use of products through the kitchen in direct proportion to the carcass. This is often uneconomic in that cuts of high value may be used with lower valued trimmings to produce hamburger or stew meat of usable lean content. Purchase of boneless meat specially prepared for this purpose would be more economical.

6. Inventory control is simplified as the meats would be cartoned and withdrawn from stock as required for each meal. Using carcass meats it is generally necessary to cut a number of carcasses to obtain a sufficient supply of any one cut. The balance of the carcass is left for use at future meals, during which holding period there is additional shrinkage through moisture loss and extra trimming of dried surfaces.

Precut meats can be purchased fresh, fresh vacuum packed, or frozen in vacuum pack or film wrapped

depending on the needs of the purchaser and/or his proximity to the supplier. This form of packaging serves to reduce shrink as well as improve handling and inventory control.

7. Although most meat purchases are made on a delivered basis there are substantial savings to be made in freight costs. The savings made by the vendor will ultimately reflect in better prices to the purchasers but in the case of D.N.D. there will be further savings in moving supplies from the supply depots to the consuming unit.

These savings result not only from the lower shipping weight due to elimination of the inedible portion but also from freight rates which favor shipment of meat products in cartons versus hanging meats or live animals. During 1967, 58% of the "standard" grade cattle (the grade used in most Government purchases) were slaughtered in Western Canada but 70% of the food purchases for D.N.D. alone were used in Eastern Canada.

It, therefore, follows that a large percentage of the beef used moved from Western Canada to the East. This is consistent with the meat trade generally as 57% of the cattle are slaughtered in Western Canada which has only 27% of the population. Example of difference in freight:

- from Saskatoon to Halifax the rate for hanging meat 28,000 lbs. minimum is \$3.59 per cwt;
- between the same points not suspended the rate is \$3.26;
- i.e. a difference of \$.33 per cwt or approximately 10%.

If lower rate and lesser weight are combined there are freight savings in the order of 28 to 33% to be made by transferring as much as possible of the preparation to the source of supply.

8. The above has referred largely to beef but similar economies will be experienced in purchasing pork, veal and lamb in precut portioned form.

9. The second largest meat item, following beef, is bacon. Much of this is presently purchased as rind-on slabs. Approximately 1,000,000 lbs. of rind-on side bacon was used in government kitchens in 1967. Of this there is a yield of about 80% good slices suitable for table use; 12% is rind and inedible scrap of no value to the consumer and 8% is edible bits and pieces suitable for soups, casseroles, etc.

Depending on the kitchen size and its equipment, the cost of de-rinding and hand slicing some of this bacon exceeds the original purchase price. Bacon can be purchased as formed, bulk, sliced at prices which will result in economies in handling, freight, reduction of waste, etc.

10. Another meat item which is used regularly but in lesser quantities is beef liver. This is purchased as regular liver and is skinned and deveined by hand before use in the kitchen. On a commercial scale this product is skinned and deveined by machine, shaped in moulds, frozen and sliced into controlled portions at a cost less than can be accomplished in a kitchen.

11. No reference has been made to the capital savings available under this program as most Government kitchens are established but substantial savings can be made in future installations, both in equipment and in space.

The exact space used for meat preparation is not defined in material studied but 25% to 50% reductions are mentioned depending on the extent to which the program of prefabricated meats and/or convenience food is discussed. One example of equipment savings in this general area is the University of

Maryland where in their newest kitchen they have \$180,000 worth of unused equipment that has been displaced by two \$7,000 food preparation units purchased when they instituted a full convenience food program.

Specifications

To make the change from present meat purchasing to a prefabricated and/or portion controlled method, new C.G.S.B. specification would undoubtedly be required. However, the D.N.D. Director General Engineering (Land) has already published some of these in CF-M-281, 30 November 1965. Additional and more detailed specifications are presently in use between the meat industry and the hotel, restaurant and institutional trade in Canada based on the "Meat Buyers Guide" published by the National Association of Meat Purveyors. These could be used as interim specifications while new C.G.S.B. specifications are developed, or even adopted in total.

Observations

A large service industry has developed and is continuing to develop, to provide hotels, restaurants and institutions in Canada and the United States with prefabricated meats and portion controlled meats and other prepared or partially prepared foods.

This industry includes most firms presently supplying Government Departments and other specializing in this aspect of the meat trade. Many of these firms operate under Federal Government Inspection and would be available as additional suppliers.

The principal selling points of this industry to the trade, which we feel are valid when applied to government purchases of meat are:

1. Payroll savings through overall reduction of kitchen help.

2. Fewer skilled meat cutters are required, a saving in recruiting and training costs.
3. Meat wastes are reduced substantially.
4. Better portion and menu cost control.
5. Better inventory control.
6. Reduced loss due to shrinkage and spoilage.
7. Reduced capital costs of new facilities through elimination of the bulk of the meat handling equipment, hanging rails, etc.
8. Reduction of 25% in kitchen space due to elimination of the meat preparation equipment.
9. Reduction of clean-up time and better control of sanitation and cleanliness from elimination of meat cutting and preparation.

As in all proposals such as contained herein there will be counter arguments and it may be suggested that the disadvantages to a change have not been considered. Some objections, by different departments, may be:

1. Adequate staff is available due to large pools of personnel, in some large institutions so no labour will be saved. However, release from kitchen duties may permit more rewarding training of these people in other fields.
2. Purchase of prefabricated meats destroys the Government grade markings so quality control becomes more difficult. This has been overcome in some areas by cutting and trimming meat to leave the graders stamp untouched, to be trimmed prior to cooking. However, this is only one aspect of quality control and it can be maintained by vigorous inspection and examination both in the producing plant and receiving institution. In many products, such as hamburg or other cut and ground meat, greater uniformity can be maintained through simple analytical methods than is possible in a kitchen committed to

using full carcass meats which may not be entirely suited to the end use.

There is a growing trend within the food service industry to reduction of on-site food preparation or an increase in convenience or pre-prepared foods. This has been developing for many years to the point where most commercial food service organizations are utilizing these prefabricated and prepared foods to some extent and many have made complete conversion to them. Meat is only a portion of the total meal but it represents close to 40% of the food costs, so any savings in this portion of the meal costs merit attention.

The list of major food purchasers in the U.S. and Canada who have already converted to the purchase of prefabricated meats includes state governments, universities, hospitals, large hotel and restaurant chains too numerous to detail. Close at hand, the Civic Hospital in Ottawa buys no carcass meats and reports considerable savings in their present purchasing method of buying prefabricated and portion controlled meats.

Conclusions

There are considerable savings to be made by Federal Government Departments in the purchase and use of meat products in a prefabricated form extended in many instances to portion controlled items.

Some of these will be direct, others will depend on careful management in elimination of extra staff in kitchens and food handling areas, others will follow as equipment and facilities are replaced or new construction is contemplated.

Departments using meat should give consideration to the purchasing of meat in the required form for their menus as soon as possible, using as specifications those mentioned above where applicable. Additional specifications can be spelled out in the "Invitation to

Tender" until such time as new C.G.S.B. specifications can be prepared. There has been a tendency in the trade to be satisfied with existing specifications, and treat them as regulations which must be followed, rather than striving to have them up-dated and revised to reflect advances in food handling and processing techniques.

Any new kitchens or food service facilities should be designed to take advantage of the savings to be made in the elimination of the bulk of the meat handling and meat cutting equipment, and the space occupied by this equipment through the purchase of pre-fabricated and/or portion controlled meats.

PURCHASING AND STORES

To define areas of improvement of operational efficiency in purchasing techniques and methods as well as warehousing and distribution.

BASIC PURCHASING METHODS AND TECHNIQUES:

Role of the Purchasing Agent:

The hospital, contrary to most industries, is primarily labour oriented and, therefore, the role of the purchasing agent is by necessity a more limited one. Most recent studies reveal that only between five to seven per cent of the total hospital budget (excluding capital equipment) falls into the purchasing agent's direct responsibility.

Seventy per cent of the budget pertains to labour, and between twenty-three and twenty-five per cent to food and drugs (which are usually bought by the director of dietetics and the chief pharmacist, respectively) and "General Administration" expenses.

The definite tendency throughout Canada to increase standardization of supplies and group purchasing and the introduction of automated as well as computerized systems narrow down the role of the purchasing agent even more.

However, since any well organized hospital should be "information oriented", the purchasing agent has to play an indispensable part on the administrative team. One of his major functions should be, in co-operation with the hospital's comptroller or director of finance, and the department heads, to examine and assess the "end-use-cost" of supplies and equipment as opposed to the "landed cost" concept.

Supervision and Line of Authority:

Associations of Purchasing Agents throughout this continent unanimously maintain that the purchasing

agent should be in complete control of the general stores or warehousing. From the point of view of accepted principles of basic internal controls, the person responsible for selection and purchase of any supplies should not be the one responsible for the receiving. The physical control of these supplies and certainly the verification of source documents in connection with these transactions should not be under the jurisdiction of the purchasing agent. This concept applies also to the pharmacist. The present role of the hospital pharmacist in Canada in relation to his purchasing functions should be challenged, especially in view of the fact that he is also controlling the inventory without any effective supervision of higher management. The tolerance of this situation can no longer be defended. The same holds true to a certain extent to the role which the director of the dietary department plays in purchasing. The manager of general stores could conceivably be under the direct supervision of a so-called director of special services (in French - directeur des services auxiliaires) who is in actuality an assistant administrator. This would ensure acceptable internal controls and neutrality and would not interfere with the teamwork concept for analytical control and review.

Purchasing Methods:

The traditional methods of purchasing are in need of a fundamental change in approach. Basically the "operational" function of purchasing is to provide an adequate supply of materials in line with reasonable requirements for all hospital services (patient care, education, research) at the best possible price and quality level and at an acceptable turnover rate without carrying excess quantities. Creative purchasing should begin with "quality specifications" which are to be based on specific studies of the "end-use-cost". In

other words, the emphasis should shift from price buying to "end-use-cost" buying. This would achieve the following:

- (a) Allowing centralized purchasing from a number of sources in a systematic way;
- (b) Simplification of purchasing by establishing reasonable ranges in quality;
- (c) Greatly assisting in developing standardization programs;
- (d) Contributing to "information orientation" of the hospital as a whole;
- (e) Technical and economic quality studies that would allow true value analysis and the development of a library of specifications which would form the basis towards any efforts at standardization and group buying.

Such a "new look" of the purchasing function requires that written policies, directives and guidelines are established and kept up-to-date. Surveys prove that Administrators and Boards in most cases only pay lip service to this vital need.

Within such a framework explicit instructions for tendering procedures and contractual buying have to be issued. However, value analysis cannot be achieved by the purchasing agent alone. Teamwork is absolutely essential. Middle and top management have to get involved. Systematic experimentation and pilot projects are often the only answer. At the same time cost finding procedures of a more defined nature are an essential ingredient in this approach. Government restrictions in at least some of the provinces and the unpreparedness of hospital administrations have been an obstacle in the introduction of cost analysis and cost finding procedures.

In other words, if we would gear ourselves to cost and responsibility centres and would agree on a

uniform distribution key for indirect expenses, value analysis, in the context of a prerequisite for improved purchasing of supplies, would become an effective tool for better operational efficiency.

For industry, value analysis of supplies is vital and at the root of competitive success. We are convinced that this whole issue is of such importance that there is a definite need to establish pilot projects in various hospitals throughout Canada. The results of these studies and experiments would be invaluable to further increase standardization and group purchasing.

Standardization, Centralization and Group Buying:

By priority, centralized purchasing in its true sense is to be achieved internally in at least the majority of Canadian hospitals, and this should include food, drugs, service contracts, insurance purchasing, purchasing of electricity, oil, gas and similar items. Such a scope would by necessity involve the need for a fully qualified management person. The traditional obstacles to such a development are immense, but have to be faced if we seriously want to come to grips with the purchasing situation in hospitals.

After true internal centralization has been achieved to a reasonable degree, standardization efforts should be made. Experience in various parts of the country prove that cost savings through standardization are no longer wishful thinking. Before standardization can be implemented on a regional basis, it will be necessary to establish and agree on technical, quality, and "cost-of-end-use" specifications.

Uniform catalogues are the next step. After achieving this at least to some degree, automated equipment may be introduced and even computerized methods. Profit-sharing co-operatives, as they are in existence in some provinces, are obviously not the final answer.

Voluntary agreement among smaller groups of hospitals seems to be the more practical initial step. However, the experiments in province-wide drug purchasing in Alberta and Manitoba seem to indicate that certain routine core items of supplies may well be an exception as long as no central clearing offices and warehousing are needed.

DISPOSABLES:

In reviewing the present use of disposables in hospitals in Canada it becomes clear that we are in a state of confusion. Problems of disposing of disposables, cost versus safety, traditional tendencies, preference of doctors and nurses, storage needs, all contribute to this state of affairs.

Although it may be true that basic total disposable programs could conceivably be developed for a group of hospitals, it is a fact of hospital life that differences in patient care levels and type of conditions treated as well as environment and equipment facilities demand individualistic surveys and analyses of products for each hospital.

This may even be done in cooperation with manufacturers. Government supported pilot projects in a number of hospitals simultaneously are the only true answer so that these findings can then be analyzed for common advantage.

INVENTORY MANAGEMENT OF SUPPLIES

The Task Force on Operational Efficiency deemed it advisable to probe into the inventory management of supplies, and assessed studies on inventory levels of supplies in hospitals in Canada and the United States which were conducted over the last few years.

Although the hospitals involved in these studies were of similar size, type of service, and patient-care

volume, major differences in inventory levels were revealed. Moreover, it was ascertained that practically all of these hospitals were in effect more or less overstocked, resulting in various degrees of storage problems and obsolescence of supplies.

The problem then was to examine whether in general, capital investment in hospital inventories of supplies can be reduced by 10-20% (in keeping with the experience in industry), and whether this can be achieved without interference with relatively safe supply levels.

Findings:

The Task Force members consulted experienced executives in a variety of industries and a few selected hospitals. First it can be stated that hospitals maintain inventories of supplies for the following reasons:

Protection - so that hospitals can operate without interruption with a steady flow of supplies.

Economy - in order to provide this protection at the lowest possible cost.

The following findings were made:

- (1) Purchasing determination of quality is largely vague in hospitals and needs to be emphasized. Generally, the best quantity to purchase should depend on the balance between the cost of possession of inventory and the cost of procuring the inventory.
- (2) Insufficient emphasis is placed on annual contractual buying with bidding procedure, and the consequent space and price savings.
- (3) Internal controls are, to some extent, lacking and certainly not comparable with the stringent controls of industry. Often re-ordering points are not

reviewed frequently, and systematic control of slow-moving items is rarely exercised.

- (4) Space availability for economical warehousing and working capital for current operations frequently prevent application of sound inventory management.

Recommendation 44:

That the provincial and federal authorities support fully the task force's recommendation regarding the "Principal purchasing method", as it pertains to "value analysis".

Recommendation 45:

That provincial authorities urge hospitals to prepare once a year an inventory cost calculation, which should include at least:

- (a) The purchase cost (quantity times unit price).
- (b) Ordering cost.
- (c) Inventory cost (average quantity in dollar value carried times 20 - 25%, or any other acceptable percentage).

This cost calculation may have to be broken down in major supply items and compared to previous experience and budgets, and could become a routine requirement on an annual basis. Furthermore, the hospitals should be urged, as suggested in other recommendations of the task force, to increase, wherever feasible, annual contractual buying with bidding procedure and drop shipments.

Recommendation 46:

That where lack of working capital is a major reason why certain hospitals are prevented from applying sound inventory management, the circumstances should be investigated immediately by provincial authorities and, where indicated, financial assistance granted.

Recommendation 47:

That the whole system of "regionalization" (as advocated by various

task forces) should incorporate as priority, effort in:

- a) Uniform catalogues for standardized core supply items.
- b) Group purchasing in all its variations.
- c) Establishing standardized specifications for a computerized system of inventory of supplies.

PRINCIPAL METHOD OF PURCHASING

The traditional method of purchasing in hospitals is based on either the "price only", or "price-quality", principle, or a combination of both, and displays, when compared with proven methods in industry, a remarkable lack of specification technique and analysis of feasibility and sound economic considerations. There is ample proof and sufficient evidence that a fundamental change in approach is needed in the hospital field.

Recommendation 48:

That, whereas in analyzing the problem it was found that it is an accepted fact:

"That the operational function of purchasing is basically to provide an adequate supply of materials in line with reasonable requirements for all hospital services at the best possible economy and at an acceptable turnover rate without carrying excess quantities", and

referring to the experience in industry, creative purchasing methods in hospitals should begin with "quality specifications", which are to be based on specific studies of the so-called "end-use-cost", or "value analysis".

End-use-cost takes into consideration such factors as price, quality, quantity, standardization, storage and distribution, cost of possession of inventory and ordering, maintenance,

effectiveness in practical application, hazards, complexity, cost of disposables versus non-disposables, availability of spare parts, service of suppliers, training time of employees, reaction of patients, doctors, employees, etc. This recommendation is substantiated beyond doubt, and this was discussed with management personnel of a number of progressive companies, by experience in industry where value analysis of supplies as well as equipment is considered vital and at the root of competitive success.

Advantages and Implementation:

The Task Force on Operational Efficiency in Hospitals believes that some of the obvious advantages which may result in a significant improvement of operational efficiency are:

- (1) Facilitating centralized purchasing from a number of sources in a systematic way.
- (2) Simplifying purchasing by establishing reasonable ranges in quality.
- (3) Assisting greatly in developing standardization programs on an individual hospital basis, or groups, or regions.
- (4) Allowing greater use of contract purchasing with substantially lower prices and the advantage of having the vendor act as storekeeper and even, to some extent, as distributor of the core items involved. This, by itself, would also accelerate the aforementioned efforts at standardization.
- (5) It would contribute to "better information-orientation" of the hospital as a whole, which needs improvement in many of our hospitals.
- (6) True and efficient value analysis conducted by knowledgeable people allows technical and economic quality studies and the development of a library of specifications.

This whole issue is, in the opinion of the task force, of such importance that the following approach, which may vary, however, from province to province, is suggested:

- (1) Each province selects a few hospitals which are best suited for pilot projects to prepare value analysis in some of the major supply and equipment areas. Since such studies have the purpose to lay down the groundwork and to establish guidelines, only typical non-controversial items, which are commonly used in hospitals, should be selected, i.e. thermometers, linen.
- (2) These studies could be conducted with the assistance or cooperation of experienced industrial engineers, or other persons of similar knowledge and training in close coordination with key management personnel of the respective hospitals.
- (3) The sponsoring agencies would have to prepare a plan of action with details of the items involved. The selection of these items should be made with a view to future standardization and group buying.
- (4) A communication mechanism is to be devised to allow continued exchange of experience between the pilot hospitals. In order to achieve best results on a large scale, it is desirable that the federal government, or any mutually agreed upon national body, serves as a pool for exchange of vital information as well as coordination of effort so that unnecessary duplication is avoided.
- (5) In anticipation of such a development, provincial authorities should strongly encourage hospitals to:
 - (a) Implement centralized purchasing for all departments (despite statements to the contrary, there are presently only a few hospitals in Canada which actually have such centralization).

- (b) Introduce the use of catalogues for all stock supply items with code numbers and preprinted requisition forms.

PURCHASING OF PHARMACEUTICALS

A number of investigations and surveys conducted in various provinces prove that:

- (1) The wide variations in prices paid for specific drugs have a detrimental effect on the aggregate cost of drugs for all hospitals.
- (2) The drug industry obviously leans towards a maximization of price rather than towards the implementation of the so-called "revenue theory".
- (3) Drugs which are on the market for many years respond immediately to volume buying compared to new drugs.
- (4) Drugs manufactured by a number of companies respond more quickly to volume discounts than others.
- (5) Practically all hospitals have a core group of drugs which are in frequent use, and that these drugs are a fairly consistent segment in drug therapeutic procedures.

This prompts the task force to conclude that these truths are applicable to any hospital regardless of size, type of treatments and the specialization of the medical staff.

However, with the exception of a few widespread experiments throughout Canada, no concerted effort in group buying of "core" drugs has been made, which perpetuates an outdated traditional concept of drug purchasing resulting in serious lack of economy and contributing to rising operating costs in hospitals.

It appears to be an unfortunate fact that hospital administrations believe that they have little or

no obligation to investigate the feasibility of large volume and group buying, because they claim that the individualistic nature of doctors in prescribing drugs is an insurmountable obstacle.

Pharmacists in most hospitals seem to maintain that they are personally obtaining the lowest possible prices and that any additional savings would be insignificant.

The above outlined results of surveys disprove this attitude. In addition, it has been well established that the hospital pharmacist does have some control over the type of drugs used and prescribed.

Recommendation 49:

That group purchasing techniques in the pharmaceutical area be introduced province-wide for core drugs immediately for at least two reasons, namely:

- a) Drug prices would at least be reduced to the level of the hospital which pays the lowest price.
- b) The volume in consolidated purchasing for a limited number of expensive drugs may yield a saving of 30% or more.

Recommendation 50:

That a further pressure on the price level would be exerted by a contract bidding procedure. The approach in each province may differ. However, it is recommended that it should involve a combination of some of the following organizations: provincial government, provincial commissions, hospital associations, College of Physicians and Surgeons of the province, Association of Pharmacists, The Canadian Society of Hospital Pharmacists, and College of Pharmacists.

The following additional points need careful consideration:

- (1) Efforts towards group purchasing can only succeed if hospital pharmacists, their Associations and

allied organizations improve the present communications among themselves.

- (2) Group purchasing does not necessarily upset the prescribing prerogatives within each hospital, but it will help influence dispensing patterns.
- (3) The development of regional information centres with or without the assistance of computers will in future facilitate this development.
- (4) Inter-provincial exchange of experience is necessary to measure the effect the implementation of group tendering procedure may have on price trends as opposed to the normal influence of competition among manufacturers.
- (5) The organization entrusted with the implementation will have to study the nature and cost of administrative procedures which must be established in order to maintain province-wide group tendering and buying. However, experience in one province has been very encouraging in this respect.
- (6) At least provincial-wide criteria will have to be agreed upon as a means to measure the achieved results on a continued basis.

INTERNAL DRUG DISTRIBUTION

Numerous personal discussions by members of the Task Force with a representative variety of hospital executives in Canada seem to indicate that administrators, doctors, nurses and pharmacists in hospitals are generally in agreement that the present internal drug distribution systems in Canada are far from satisfactory and that efforts to find an improved system are long overdue, especially in regard to the safety factor in patient care.

Recommendation 51:

That the so called "unit-dose-packaging-system" be introduced

without much delay in at least five hospitals of varying size in strategic locations in Canada.

Recommendation 52:

That a committee of representatives of these five hospitals be formed with the following terms of reference:

- a) To study the basic problems of the introduction of this system from an organizational, educational and cost point of view.
- b) To visit and examine the experience of hospitals in the United States which have introduced this system and have gained some experience.
- c) To prepare a budget (individually for each of the five hospitals), segregated by:
 - i. Cost of education to pre-condition and familiarize personnel.
 - ii. Cost of additional personnel, if any.
 - iii. Additional cost for packaging in the hospital pharmacy, where necessary.
 - iv. Additional cost of pre-packaged unit-dose drugs.
 - v. Initial cost of capital equipment.

Recommendation 53:

That inter-provincial mechanism be found to evaluate the aforementioned report and agree to share the cost for the experimental introduction of the "unit-dose-packaging system" on a federal/provincial basis for an agreed upon limited time.

Recommendation 54:

That evaluation of the experience of these five hospitals to be made from time to time and pertinent information to be available to all hospitals in Canada.

Recommendation 55:

Federal/Provincial authorities influence drug manufacturers so that through research and technical development they are able to supply at an accelerated pace and at more reasonable cost, solid, liquid, and injectable unit-of-use packaging for the hospitals.

On the surface this recommendation does not seem to reduce the operating costs. However, it is emphasized that:

- (1) There should not be any doubt that this system, due alone to its safer distribution of drugs, will be the trend in the future.
- (2) The drug industry will sooner or later come up with solutions to the packaging problem at lower prices.
- (3) Hospitals in Canada should not have to wait to the last moment to gain experience with this system and be in a position to assess the pros and cons first hand now.
- (4) This system, properly introduced, does allow more effective utilization of non-professional help, thereby permitting professional pharmacists and nurses to spend more time in direct patient care. It should be recognized that the present drug distribution system utilizes approximately 15% of available professional nursing time.

NATIONAL FORMULARY AND DRUG INFORMATION SYSTEM

As an obvious result of discussions and studies carried out during the course of various investigations of the task force, it became quite apparent that individuals as well as institutions throughout Canada are engaged in costly duplication and overlapping efforts to resolve problems which are common to the vast majority of hospitals.

It also became clear that some of these problems can really only be solved on a national, provincial or regional level. Fortunately, unlike investigations into diseased organisms and mechanisms, research into management fields generally need not be based on a total or major lack of information and/or direction through which the problem can be attacked.

These comments apply in general to most of the management areas in the hospital field. They are, however, particularly pertinent to the problems associated with the distribution and use of drugs in hospitals and the provision of drug information services to the large as well as small institutions.

Experiments in three provinces, and some of these efforts have been quite extensive, with regard to drug costs and centralized purchasing indicate clearly that a great deal of individual effort has been expended to introduce some logical and rational basis for pharmaceutical purchasing and the dissemination of drug information.

It is the opinion of the task force that these efforts are fragmentary, mainly due to:

- (1) Lack of coordination in the identification of drugs,
- (2) Lack of the development of quality control standards,
and
- (3) Lack of standard terminology.

The need for rationalization is clear not only from the point of view of the hospital, but, to some extent, from that of the drug industry. At present the drug industry is perplexed at the diversity of demands which emanate from the various institutions across the country.

Because a standard terminology does not exist, pharmacists are placing orders which vary markedly in content and degree, and result in un-economic production

runs on the part of the drug industry. This, consequently, results in higher drug prices to the various institutions.

Too often these variations in product specifications result, unfortunately, from the whim of individuals rather than any significant difference in the end-product use.

If standards were available and adhered to on a large scale, many, if not the majority, of these orders could be filled from regular and economic production runs.

Further, it is well known that other factors which contribute to the high cost of drugs include the immense cost of advertising, both for display and the provision of free samples to the medical profession; the duplication in research among various houses; the cost of drug storage in the various hospitals; the cost of making an impact on the subscribing of drugs by the medical profession.

During this investigation it became apparent that some of these costs could conceivably be reduced through the use of standard nomenclature and definition. Specifically, there are three areas which require immediate and urgent attention:

1. A national hospital formulary system for both generic and trade-marked drugs including definitions for all pharmaceutical products used in the hospitals and related institutions.
2. A national drug information system.
3. An inventory control system for drugs and other pharmaceutical supplies on a regional basis.

Of the three systems, only the "hospital formulary system" need be carried out on a national basis. However, once the national formulary system and its attendant communication mechanism have been

established, it may be desirable to integrate the drug information requirements into an overall system, which would provide both drug and formulary information.

It is interesting to emphasize that an international drug formulary does not exist, neither do we know of any efforts being made in this direction. It is, therefore, obvious that any attempt by the federal government, with the cooperation of the provinces, to establish such a system could well have broader implications in an international context.

In fact, at an international conference of clinical physicians in September 1968 in Niagara Falls various participants expressed extreme interest if such an attempt would be made by the United States or Canada. Although it would not only be desirable but essential to implement such recommendations, it has become clear that the amount of research required will be very substantial.

Consequently, it is suggested that implementation should only occur when economic feasibility studies indicate that control possibilities exist at a reasonable cost relative to the priorities assigned to the allocation of funds, both federally and provincially, for improvements in the health-care delivery system which may hopefully result from the implementation of recommendations of the various Task Forces. Considering systems and methods for control which are already in use and proven in industry, it is apparent that several systems are available which could adequately meet the requirements for a formulary, drug information and inventory control system. The Task Force in its deliberations was unable, mainly because of time limitations, to research the economic feasibility of the available systems.

Recommendation 56:

That a "Drug Information Advisory Board", including representatives of the Food and Drug Directorate, medical profession, hospital authorities, pharmaceutical manufacturers, pharmacists and various federal and provincial health bodies, be established.

GROUP PURCHASING OF COMPREHENSIVE INSURANCE

Actual experience in some provinces and certain surveys studied by representatives of the Task Force on Operational Efficiency seem to indicate that there is a need in Canadian hospitals to:

- (1) Achieve a greater degree of security for the physical assets by way of insurance at reasonable cost and to bring liability insurance coverage in line with to-day's requirements.
- (2) Coordinate and/or standardize all types of hospital insurance wherever possible and feasible.
- (3) Reduce premiums for all types of insurance.

In studying this aspect of operational efficiency in hospitals, members of the task force ascertained that successful attempts have already been made in group insurance purchasing in at least three areas in Canada.

The task force carefully weighed the pros and cons of this problem.

Recommendation 57:

That surveys be made in all provinces as to the present insurance coverage in relation to risk in all pertinent areas as well as the premium cost and claim experience.

Recommendation 58:

That if feasible a form of self insurance be considered.

Recommendation 59:

That provincial governments should realize more than in the past their involvement in this matter, since inadequate coverage, especially for fire and liability insurance, may result in serious financial loss which the hospital may not be able to absorb and which, consequently, would result in urgent requests for major financial assistance.

Recommendation 60:

That guidelines in each province be established as to type of insurance range and diversity, as well as basic minimum specifications in relation to risks.

Recommendation 61:

That following the recent experience in group buying of hospital insurance, similar endeavours be undertaken throughout Canada with the aim of:

- a) Providing competent consultant service.
- b) Achieving, where possible, uniformity on minimum standards.
- c) Reducing cost and still maintaining sound coverage.

Recommendation 62:

That since the approach in each province again may vary, initial discussions should be held immediately between provincial authorities, hospital associations and any other suitable organization in order to agree on the principle and develop an initial plan of action. This careful and cautious approach is recommended because of:

- a) The authority and responsibility of hospital boards in this particular field.

- b) The uncertainty of the reaction of insurance brokers and insurance carriers or underwriters.
- c) The long established personalized service which many hospitals receive from their brokers, and the delicacy in selecting reliable and well reputed insurance carriers.

PURCHASE OF OUTSIDE SERVICES

Traditionally hospitals have considered the cost of the purchase of electricity, oil, gas, steam, water and telephone service as something "untouchable".

The mistaken notion seems to be widespread that the cost for these services is fixed and does not call for any management investigation to achieve better economy. But, recent studies in bulk purchasing arrangements of at least one group of hospitals in Canada prove beyond doubt that this area of operational expense needs to be explored vigorously. Specifically we refer to:

- (1) Studies of standardization of oil purchase and investigation of oil versus gas or other energy source, both from the point of view of cost as well as air pollution, supply fluctuation and financing of conversion cost with provision for flexibility to use both;
- (2) An experience report from certain hospitals which indicates large savings after studying the different alternatives in the purchase of electricity;
- (3) With regard to telephone communications, a study of superfluous telephone apparatus, and investigation of the possibility of introduction of modern systems

ASSESSMENT OF BASIC PHYSICAL FACILITIES IN HOSPITALS

Data pertaining to size, type and condition of basic physical facilities, utilities and services are not

always up to date in hospitals or provincial government records. Thus, requests related to hospital facilities, budget approvals, minor or major renovations, new services or new construction, are sometimes assessed on inaccurate information.

Recommendation 63:

That a detailed and profound technical survey should be performed in most parts of Canada on a provincial-wide basis. The purpose and advantages should be:

- a) To establish a comprehensive technical dossier for each institution.
- b) To evaluate the data and provide the individual Hospital Boards with a listing of important findings which may need their immediate attention and action.
- c) To draft, up-date or correct architectural drawings where necessary (in older hospitals often no drawings are available at all).
- d) To establish, possibly with the assistance of carefully planned computer programs, provincial-wide accurate survey data of all hospitals for establishing of certain physical criteria as guidelines for budget approval purposes (operational expenses as well as capital expenditures).
- e) To establish norms for basic physical hospital facilities, major renovations and new construction as well as cost of maintenance and utilities. This would be compared with available comparative industrial engineering data and experience.
- f) To form the basis for establishing preventive maintenance programs in hospitals individually or collectively.

Since a beginning of this kind of survey has already been made in one province, a similar approach is recommended for other provinces, using, if possible, the experience already gained.

OTHER COMMENTS

Because of the time element some areas were not reviewed in detail by the task force. Some of these fall more appropriately into the terms of reference of other task forces. However, we deem it advisable to make the following additional comments.

While it is not brought out in the main body of the report dealing with hospital interrelationships, it may become feasible that hospitals under certain circumstances consider actual merger to effect more economic and efficient operation. This is a development that is emerging in other countries and should be watched with interest by Canadian hospital authorities.

Throughout the report we indicate the feasibility for hospitals to get together on various activities i.e. purchasing, laundry, etc. In no way is it suggested that this principle is limited to those areas in which it has been recommended as being desirable. The task force would like to emphasize that hospitals should continue to look into other areas where sharing of services can effect economies.

Another area that should be examined is the growing trend of expanding out-patient facilities in our health care system. Although comments will be presented by other task forces we would like to record the following from a report of a recent conference on "Out-Patient Health Care" sponsored by the United States Public Health Service, March, 1968. "Hospitals were organized originally to provide in-patient care. To-day, in the light of changes that have taken place in medical practice and in the delivery of health care, it is imperative that equal consideration be given to out-patient services. Participants believed strongly that hospitals must assume a positive role in meeting the growing demand for such services. They acknowledged

that the standards commonly applied to in-patient care have not generally been required, or even developed, for out-patient services. This is a deficiency that cannot be permitted to continue. A major educational effort must be undertaken to improve attitudes toward out-patient care on the part of everyone connected with the hospital.

"Conferees agreed that the hospital of the future should become an ambulatory care center with in-patient beds attached, rather than a concentration of beds with out-patient facilities attached. The core of the hospital may remain intensive in-patient care, but its major service to the community should be ambulatory care -- including multiphasic screening, preventive services, diagnostic and treatment services, home care programs, health-related social services, and a network of relationships with other health care programs. Such a role may involve the hospital in operating satellite units of various types.

"The foregoing concept has significant implications for planning in terms of programs and physical facilities. It was noted, however, that the translation of philosophy and program into physical reality is a difficult process. Even when program plans are well formulated and put in writing for the interpretation of the architect, they may not be translated into the desired result. Old patterns are hard to break. Innovation may be difficult. Standard plans often seem easier".

The task force recognizes that the members of the medical staff in the treatment of their patients create demands for services of the hospital. These, obviously, have an influence on the area of operational efficiency and economic utilization of resources -- human and physical.

However, the task force has been assured that this area of investigation will be dealt with adequately by the Task Force on Utilization. We have also left it to this task force to comment on the effect that various professional bodies have, through their standards and accreditation programs, on utilization and thereby operational efficiency.

It is apparent that physical facilities - location, size, design, layout, etc. - have a dramatic impact on operational efficiency. Again, we have been assured that these points will be reviewed by the Task Force on Beds and Facilities.

We have already mentioned two of the task forces in which there were areas of mutual concern. However, with regard to the Task Force on Salaries and Wages, several joint meetings were held. Salaries and wages are such a substantial part of the hospitals operating budget, and because of this, the two task forces kept continually in touch with each other to avoid duplication of effort.

In conclusion, the task force hopes that the comments and recommendations will be of some constructive assistance to our ministers of health in their continuing efforts to level the costs of health care in Canada.

If by this report, we have made a contribution to this objective, the members of the Task Force on Operational Efficiency are satisfied that their efforts will have been worthwhile. We are grateful for having been given the opportunity to participate.

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SECTION 2

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TASK FORCE ON SALARIES AND WAGES

TASK FORCE ON SALARIES AND WAGES

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INTRODUCTION

The Task Force on Hospital Salaries and Wages has for the past six months, (December 1968 to June 1969) been studying in depth the impact of salaries and wages on the cost of health services in Canada. As salaries and wages account for over 70% of the operating costs of the most expensive segment of health service facilities - the active treatment general hospital - it has become apparent to the task force that major economies can only be realized if more effective use is made of the personnel employed in the health services of our country.

In this context, salaries and wages are of secondary importance to the development, organization and management of personnel, and the group might be more appropriately named the Task Force on Hospital Personnel Management.

The recommendations that follow are based on the belief that the salaries, wages and incomes of all personnel engaged in professional, technological and general activities in the health field should be competitive with those of similarly educated and trained personnel in other fields. Health and patient care have always enjoyed a favoured position because of the mystique of the power of healing.

On the other hand, because so much of the back-up force in patient care, particularly in hospitals, is dependent on large numbers of people rather than machines, the incomes of general staff personnel in the health field have tended to lag behind those in other industries.

During our deliberations, it has become apparent that a significant percentage of the costs of health care, particularly patient care in hospitals, is generated by physicians who are not held accountable for those costs under our present health care system.

Furthermore, it is evident that the incomes of physicians account for a major portion of the total cost of health services in Canada. These two factors must be given serious consideration by the Committee on the Cost of Health Services. However, as several other task forces are considering the second factor, medical-cost component of this national problem, our task force has not dealt with this factor in this report.

We would nevertheless like to stress that the achievement of effective cost controls in hospitals and other health facilities is dependent, to a large degree, on the establishment of responsibility and accountability for the creation of expenditures in all health services by the medical profession.

The recommendations of this task force, which follow, are validated and justified by background information contained in the text of this report, its appendices, and other referenced documents. Some of the recommendations, if implemented, would provide considerable short-term gains; others would achieve economies over a longer period of time. Some can only be achieved through changes in legislation and regulations at the federal and provincial levels. All are dependent on the creation of an organized health care system to replace the present fragmented approach to health care in Canada.

The task force has considered, and will recommend on, these problems under the following general headings: -

- A - Regional Organization
- B - Management
- C - Education
- D - Standards
- E - Personnel, Salaries and Wages
- F - Legislation and Regulations
- G - Design of Health Facilities
- H - General Comments

A. REGIONAL ORGANIZATION

Much of the present inefficiency in the health services results from a combination of two major factors:

- a) the variations in size, economic factors and hospital insurance programs in the provinces and territories;
- b) the provision of health services to communities through an unco-ordinated assortment of relatively autonomous and unrelated organizations and individual practitioners.

The requirements for health services vary from community to community, and from region to region, across Canada, on the basis of a wide variety of social and economic factors. It is, therefore, difficult to establish a standardized national health service that will best serve the needs of the citizens without recognizing the needs for regional adaptations.

A similar situation exists within all but the smallest of our provinces and territories. The variation in community needs is such that the centralized provincial authority cannot devise a single standardized program that will best suit the needs of all regions in the province. As a result, the "average" program that is developed provides too little for the citizens of one region, and too much for those in another. This inevitably results in less than adequate service in some areas, and costly overdevelopment and servicing in others.

The localization of the control centre for the provision of health services at the local level with each individual institution and doctor has resulted in a fragmented, unbalanced and relatively inefficient health system. It is not possible to effectively program health care for the public because of the bottle-necks and gaps that develop in the service. As a result, the movement of patients through the local "system" is sluggish and expensive.

The provincial authority is too far removed from the local community needs to be able to identify them and plan accordingly. Individual hospitals and physicians are too close to the trees to be able to identify the forest. This task force has, therefore, come to the conclusion that the proper level for the control of all planning, and for the coordination of a community health system, is the regional level.

The regional health board we visualize differs to a considerable degree from the regional planning councils that exist in some areas of Canada today. They have not functioned adequately because they lack any authority to control the development of facilities and services in their assigned areas. Our regional health board would be a responsible planning organization with powers delegated to it by the provincial authority and local hospital boards. It would have delegated authority to exercise control over the planning, operation and management of all health services within the region assigned to it.

Such a board would reduce, to a degree, the "autonomy" of the individual hospital and other health facility, but it would not interfere with the final responsibility of the provincial government for the control of health services and the expenditure of public funds. In our view, it would enhance the role of the provincial authority.

Recommendation 1:

That each province develop, at the earliest possible time, a comprehensive health system based on the co-ordination of planning, operation and financing through regional health boards which have the authority to provide organizational, management and consultative services to a broad spectrum of health care facilities in a prescribed area. The provincial authority would continue to maintain its over-all

control and coordinating functions through a direct relationship with regional health boards.

Recommendation 2:

That the regional health board contain representation from:

- a) Boards of hospitals and other health facilities in the region
- b) Health administrators
- c) Civic government
- d) General education
- e) Medical, nursing, and dental societies
- f) Allied health personnel
- g) The public at large.

Recommendation 3:

That the specific present and future role of each facility in a regional health system be defined, and that its future development be relevant to its assigned role.

B. MANAGEMENT

At present, the approach to the health care needs of the community is fragmentary at best, with hospitals, provincial and municipal health and welfare departments, etc., each operating a jealously guarded realm, often duplicating what another agency is doing.

Given effective management, it would identify and consider the total health care requirements of the community and, using hospitals as focal points, develop health care centres providing comprehensive services - home care, preventive medicine, and rehabilitative, diagnostic, therapeutic, psychiatric, and social service - on a regional basis.

In this way, expensive duplication of highly technical services would be minimized and a means of meeting the variety of health care requirements would be developed.

Obviously, if this objective of providing a comprehensive health care service is to be attained, there must be a complete rearrangement of the management structure with the introduction of modern and effective management techniques.

This implies that the rigid and often ineffective procedures of the past must be abandoned. It implies, also, that the preparation of individuals for managerial responsibility must be of a calibre comparable to the best in business and industry.

Adequate preparation in management techniques is most sadly lacking in the two major professions that directly or indirectly create most of the expenditures in health care - medicine and nursing. Formal organization and management instruction is lacking in their educational programs.

Recommendation 4:

That a comprehensive approach to the health needs of the community be developed, utilizing the hospitals as health care centres to form the focal points of such development.

Recommendation 5:

That this development take place on a regional basis.

Recommendation 6:

That there be upgrading of administrative standards in the health services to make management in this field comparable to management in the business and industrial community.

- a) by improvement and updating of present degree-programs in hospital, health and nursing administration;
- b) by increasing the number of formal basic and continuing educational programs in health administration;

- c) by devising a regional management system in which a well-trained and experienced administrator with good consultative staff resources could be made responsible for a number of health facilities in a region; and
- d) by considering the team approach to nursing, medicine and management by setting up a national committee composed of experts in nursing, medicine, hospital administration and allied health fields.

Recommendation 7:

That the nursing components of health care be assessed and reorganized to provide for the better utilization of available personnel as follows:

- a) by the adoption of current management organization and techniques;
- b) by the development of methods to improve the utilization of nursing personnel, based on carefully formulated work standards and in-service education. In part, this could be accomplished by development in the inpatient care areas of the health care centre of a system of identifying the specific nursing needs of each patient and, therefore, the staffing pattern of each nursing unit. The development of nursing-team staffing patterns should be on a minimum base, rather than on a maximum patient-care basis, supplemented by an adequate "float" or "flying squad" pool of full-time and/or part-time staff nurses;
- c) by the development of methods of evaluating the quality of patient care; and
- d) by the development of criteria for measuring productivity and evaluating performance of professional and technological personnel in the health field.

Recommendation 8:

That because good management is dependent on good information, there must be a national computerized hospital information centre developed to provide provincial authorities, regional boards, and individual hospitals with the current comparative statistics and indices required by management to develop and maintain good staff productivity.

Recommendation 9:

That the Research and Statistics Directorate of the Department of National Health and Welfare, together with the Department of Labour, undertake an on-going program to compare productivity in hospital with that in other industries.

Recommendation 10:

That a national committee, composed of experts in nursing, medicine, hospital administration and allied health fields, be established to develop a continuing operational research program to maintain progress in health care organization and management techniques.

Recommendation 11:

That all hospitals be encouraged to establish goals, objectives and functional organizations through organized management programs, and that such programs include provision for the close interdepartmental relationships required for effective operation.

Recommendation 12:

That research funds be made available for a thorough study of the present day roles of the board of trustees and administration in a hospital or other health agency,

and that the objective of the study be the development of better defined and more meaningful roles for each in a non-governmental, although government-financed, comprehensive health system.

Recommendation 13:

That highly qualified management personnel and labour relations consultants be made available to hospital management on a regional and/or provincial basis.

Recommendation 14:

That hospital cost accounting procedures that identify specific educational, research, medical and hospital service components be developed, and that the direct costs of medical service, education and research not be included in computing the operating costs of hospitals, or the per diem or per patient-stay rates.

Recommendation 15:

That the principle of progressive patient care within an individual hospital, a hospital system and a health region be adopted as a basic requirement for the efficient operation of a regional health system.

Present cost accounting procedures in hospitals give a distorted view of the actual cost of patient care through the inclusion of the costs of patient care, education, research and some interpretive medical services.

Cost sharing formulae between the federal and provincial governments have perpetuated this practice. Better comparative statistics would be provided if these various functions were separated for hospital cost accounting and reporting purposes. This would provide a better basis for determining annually the rates at which hospitals would be paid for their services, and would,

as well, enable management to identify areas of high cost before expenditures are made, rather than in retrospect.

Recommendation 16:

That a new national standard hospital accounting system be developed that:

- a) identifies the specific functions of a hospital - patient care, education and research;
- b) identifies the individual components of each of these functions;
- c) separates the cost of medical care, education and research from the computation of the actual operating costs of a hospital.

Many major clinical departments in large hospitals are under the direction of specialists in their own professional fields who have not had the benefit of organized educational programs in management.

The specialists are selected because of their expertise in their professional fields, but they are often not able to reach their professional potential because much of their time is taken up by management problems that could be better handled by assistants with management training and experience. It is therefore recommended:

Recommendation 17:

That the directors of clinical departments be provided with administrative assistants with the appropriate level of management training, to relieve the directors of management responsibilities involved in the operation of the departments.

C. EDUCATION

It was recognized by the task force that considerable inefficiency results from a lack of adequate educational preparation for some positions, and from the failure of the health care system to utilize many

personnel at or near the potential provided by their education and experience. The lack of adequate educational preparation is most apparent in the management aspects of the health services.

Many of those responsible for the management of hospitals, or of major divisions of hospitals, have not had adequate management training. Many of those that have had planned educational programs have received it in narrow and restricted curricula that have not yet included current management philosophies, systems and techniques.

On the other hand, at the service level, many well educated and trained professional and technological personnel are employed in positions that require skills below their level of competency. In some cases, this results from the unavailability of adequately trained assistants or auxiliaries. In others, it is the direct result of poor management techniques and the acceptance of traditional staffing patterns that do not make proper use of available staff.

Recommendation 18:

That presently established programs in health service administration and those developed in the future, at universities, community colleges and institutes of applied arts and sciences, be urged to ensure that course contents include sufficient emphasis on current management philosophies, principles, systems and techniques.

Many traditional educational patterns for health service personnel have been based on apprenticeship programs developed by individual hospitals. While hospitals provide an excellent setting for the clinical portions of such programs, they are not recognized as educational institutions and the programs they develop tend to be too service-oriented.

In many provinces, no minimal educational standards for hospital-based programs have been developed and, as a result, the qualifications of many allied health personnel are not portable.

Recommendation 19:

That provinces be encouraged to develop centralized educational programs for health service personnel on a regional and provincial basis, and that the didactic components of these programs be based in the appropriate educational facilities with the hospitals contributing the clinical components of the curricula.

Recommendation 20:

That central educational programs for the preparation of male and female nursing assistants eligible for registration be developed in provinces in which this has not already been done.

The programing and maintenance of a co-ordinated program of patient care in hospitals requires the employment of a superclinical nurse - the clinical specialist. She has post-basic education in a clinical specialty in nursing and is competent to follow the patient through a planned course of investigation and treatment in the hospital setting, thus relieving the doctor of organizational details, providing a continuum of care and making better use of personnel and facilities provided by the hospital.

She will be the patient care co-ordinator of the future who will work closely with the attending physician in providing a continuity of care for the patient.

Recommendation 21:

That priority be given to the development of graduate educational programs for clinical specialists in nursing, and for post-basic speciality programs in clinical nursing.

D. STANDARDS

It was noted as a major weakness in the present health system that few standards have been developed by which the quality and quantity of health services can be assessed. Those that have been used in the past are primarily input units and no measurable standards of output or productivity have been developed.

Comments on the need for the development of such standards are included in several recommendations in other sections of the report. However, there are a few specific recommendations that should be given consideration.

Recommendation 22:

That cost per patient stay be adopted as one of the measurement standards in acute care facilities by federal and provincial hospital authorities, in place of the presently used per diem costs, and that national standards on patient-stay costs (including minimum, median and maximum indices) be developed on the basis of diagnosis and procedure.

Because the input of the hospital is under the control of the Medical Staff and is therefore not constant, the activity of its various departments and units fluctuate through a wide range. Traditional staffing patterns for nursing units are relatively rigid, and the tendency is to employ enough staff for the peak periods of activity. This results in the development of maximum staffing patterns and a resultant wastage of personnel during normal periods of activity.

Recommendation 23:

That all hospitals be encouraged to adopt, at the earliest possible time, programs for assessing patient needs on a day-to-day basis and adjusting staffing patterns on nursing units accordingly.

Recommendation 24:

That nursing hours per patient day not be used as the only standard for assessing the quality of patient care, or in the development of adequate staffing patterns in hospitals.

Recommendation 25:

That the authority for decisions concerning the provision of "Necessary Nursing Care" for each patient be clearly designated as a nursing responsibility.

Recommendation 26:

That a national committee composed of experts in nursing, medicine, hospital administration and allied health fields be established to:

- a) devise methods for the development of standards for nursing care;
- b) develop methods of evaluating the quality of the patient care;
- c) develop criteria for measuring productivity and evaluating performance of professional and technological personnel in the health field; and
- d) establish a continuing operational research program to maintain progress in health care organizational and management techniques.

E. PERSONNEL, SALARIES AND WAGES

Salaries and wages make up over seventy percent of the operating costs of hospitals. While this, in

total, represents an enormous amount when one considers the hospital system of the country as a whole, the salaries paid to individual employees are not excessive by comparison with comparable levels of employment in other sectors of the economy. During the past ten years, hospital salaries have risen more rapidly than those in industry.

However, this has been to a considerable extent a catching up process necessitated by the poor economic condition of hospitals and their employees prior to the introduction of the national hospital insurance program. Present comparative studies indicate that we have become competitive in most areas. It was noted, however, that the health team still contains groups with among the highest and the lowest incomes in the employable sector of our society.

Out-dated management practices, traditional staffing and personnel relations practices and a lack of good production systems, have resulted in hospitals and other health facilities under-utilizing the production potential of many of their employees.

Recommendation 27:

That strong consultative personnel services be provided on a provincial and/or regional basis, including statistical and information services that are required for good personnel organization and management in health facilities.

Recommendation 28:

That collective bargaining systems and dispute settlement procedures in hospitals and other health facilities be improved by providing continuing expert consultative, research and advisory services to both management and unions with the mutual objectives of providing better services to patients and at the same time assuring the rights of social justice to hospital employees.

Recommendation 29:

That a uniform job classification, system be developed and applied for all employees in hospitals and other health services.

Recommendation 30:

That the federal and provincial Departments of Labour be requested to undertake a co-ordinated study to identify the factors causing the high turn-over rate of staff in hospitals as compared with similar fields of employment.

In most hospitals the personnel service has in the past functioned primarily as an employment service. Salaries paid to personnel officers have in most cases not been comparable with those paid in industry and as a result most hospitals do not have personnel services of the quality and comprehensive nature required by organizations employing large numbers of people.

Because of this lack of quality and scope it has not been possible in most hospitals to convince professional and technological departments that the personnel functions of the organization should be centralized. It is essential that the personnel services and management functions be up-graded at the earliest possible moment.

Recommendation 31:

That the management of the personnel and industrial relations functions of hospitals be strengthened and improved, and that they be integrated with the general management functions of the hospital as a whole and those of all of its departments and divisions.

Recommendation 32:

That a current computerized inventory of health manpower be developed by the Federal Department of Manpower

and Immigration, and that information from this inventory be made readily available to hospitals and other health agencies to achieve the most effective allocation of competent health personnel.

Recommendation 33:

That each province be encouraged to develop a health advisory council composed of representatives of provincial hospital, professional and technological associations and of the provincial hospital insurance authority.

Recommendation 34:

That salaries, stipends and honoraria provided to participants in undergraduate and postgraduate educational programs in the health sciences be paid by an educational authority rather than by hospitals.

Recommendation 35:

That the annual salary increment programs for health service workers based solely on time in employment, be phased out.

Recommendation 36:

That criteria for salary administration in the health services be developed on the basis of levels of responsibility and professional or technological proficiency required, that salary scales be developed according to such levels, and that progression within established salary ranges be based on improvement in performance rather than on length of time in service.

The allowance of "sick days" with pay to members of hospital staffs was developed as a protection before the development of insured group sickness indemnity plans. These sick days are now looked upon as a right by many employees and some hospitals pay all or

part of the earned sick-day benefits at the termination of employment.

This latter practice has resulted in some employees seeking a change of employment when they have reached the maximum allowance. The provision of sick-days also encourages absenteeism.

Recommendation 37:

That portable sickness indemnity plans, pension plans and group insurance plans for hospital and other health service employees be developed on a provincial or national basis, on as wide a base as possible, and that they become effective for each employee as soon as he has qualified for a permanent or full-time position.

Recommendation 38:

That perquisites (board and lodging charges, parking, etc.) should be charged based at least on cost to the hospital or facility.

F. LEGISLATION AND REGULATIONS

A number of the inefficiencies detected in the present health system in Canada result from federal and provincial legislation and regulation that discourages the adoption of good management practices at the local level.

In the larger provinces, it is difficult for the Provincial Authorities to assess the needs of individual communities for health care. This has resulted in the development of a fragmented and costly health care system. Federal and provincial legislation has not encouraged the development of incentives for improvement in efficiency.

The use of such meaningless standards as "hours of nursing per patient day" and "per diem rates" has not encouraged the development and implementation

of effective management techniques. With an adequate back-up of consultative services, and with adequate authority and co-ordination on a regional basis, hospital administration is now capable of providing good management.

Recommendation 39:

That provincial health authorities encourage and support the utilization of incentives to stimulate greater productivity at the hospital, department and staff levels.

Recommendation 40:

That no further approvals for the development of acute care (active treatment general hospital) facilities be granted until regional studies of comprehensive health care requirements have been carried out and approved by the appropriate provincial authorities, and that approval for future health care facilities, and for major renovation projects, be made contingent on their acceptance and recommendation by regional and provincial health planning councils.

Recommendation 41:

That a constant review be carried out on the legislation governing professional and technological associations in the health field, to eliminate protective regulations that prevent or discourage the transfer of responsibility for patient care procedures that is required by the rapidly changing patterns of practice in the health service system.

To an increasing degree doctors are using hospital facilities for procedures that are normally carried out in their private offices. Most of these are handled in outpatient and emergency departments. In some cases doctors carry out their total practices in hospital facilities. Rarely is any charge made to the

doctor for these services provided by the hospital, and the fees charged by the doctor to the patient or his insurance carrier are the same as would be charged had he used his own office, personnel and supplies.

This practice increases hospital costs because additional personnel, space, equipment and supplies are required to provide the service. Although a minimal service charge is usually levied by the hospital, it is not adequate to offset the direct and indirect costs incurred. Where such charges are made, and where both medical and hospital insurance is provided by government agencies, there is double payment for the "office overhead" factor in the medical fee.

Recommendation 42:

That provincial medical fee schedules for procedures normally carried out in the physician's office be developed on a two-value basis, i.e.,

- a) when carried out in the private office;
- b) when carried out in hospital facilities;

and that realistic fee schedules to be charged by hospitals for ambulatory care be developed. In provinces in which no hospital charge is made to patients for outpatient or emergency services, the government payment formula should include a realistic factor to cover these costs.

Recommendation 43:

That each province develop policies and cost-sharing formulas providing for rental payments by doctors for office and other accommodation in hospitals used for the practice of medicine.

The traditional development of hospital services in Canada in an uncoordinated manner based on local demand and convenience, and the pattern of medical practice in this country, has resulted in the concentration

of the bulk of our health services in the most costly facility in the system, the acute care general hospital. The more recent development of independent hospitalization and medical care insurance programs that do not require a financial contribution by the patient when services are provided has further aggravated the situation by encouraging over-utilization by the public. The fact that there is no coordination or interrelationship between the hospital and medical insurance programs, and therefore no centralized control over health care costs, has encouraged over-servicing by the medical profession and a resultant poor utilization of costly hospital beds and facilities. Under this system doctors have not been provided with an incentive to practice preventive medicine and thus keep out of hospital patients who do not need these costly facilities. In fact the reverse has been the case.

Comprehensive health care systems which do provide patients and their doctors with incentives to make the best possible use of general hospital facilities have been developed in some centres in North America. Examples of such systems are the private enterprise approach of the Mayo Clinic, the Kaiser Health Plan and the Community Health Centre programs developed by such groups as the steelworkers. These all provide doctors with financial incentives to treat patients on an ambulatory basis, and to prevent conditions that will require hospital care.

Recommendation 44:

That active operational research programs be undertaken and financed on a national basis to develop comprehensive health care insurance programs that will provide financial incentives to both patients and physicians to avoid the use of acute care hospital facilities for care that could be provided as well, or better, in less costly facilities.

Recommendation 45:

That where there has been an over-development of acute care hospital facilities a reorganization program on a regional basis be undertaken to develop a comprehensive health system based on the progressive patient care approach.

G. DESIGN OF HEALTH FACILITIES

While this problem is being studied in detail by another Task Force it was felt that we should comment and recommend on it as well because of its serious implications in the effective utilization of personnel.

It is a proven fact that the capital costs of hospital facilities equal only three years of the operating costs of the facilities. Over seventy percent of the operating costs are salaries and wages paid to employees. It is therefore essential that the facilities be designed in such a way as to make the most effective use of the personnel that will staff them.

While basic minimum standards for design have been developed on a national basis, the development of plans for an individual hospital unit has been the responsibility of its board and administration and its architectural consultants. In many cases none of these participants has had extensive experience in this important design process and the result has been hospitals that are architecturally attractive but operationally costly and inefficient. In many cases the design has been the primary objective, and the operational systems that make it function have been considered when it is too late to make major changes.

Hospitals of all sizes are composed of a multiplicity of basic units, each of which could be studied in depth by competent health service personnel and architects with a view to developing basic patterns that would facilitate the most effective use of the

personnel that work in them. These basic efficient units could then be put together in a wide variety of configurations and numbers to produce the size and type of hospital required by a particular community.

Such an approach would ensure the most effective operational environment and would avoid the undesirable effect of a series of stereotyped hospitals of various bed sizes such as was developed under the emergency situation that existed when the Armed Forces expanded rapidly during World War Two. The individual needs of each community could be met by the appropriate combination of the variety and number of the basic efficient units that are developed.

It is recognized that the total health care facility package required by a community or a region is dependent on a wide variety of factors. For many years there have been a number of conflicting statements on how large or how small a hospital can be and still function in an efficient manner.

Some inconclusive studies have been carried out on the problem of hospital size but the basic questions still remain unanswered - can a hospital be too large or too small to be efficient and effective? Is there an optimum size that provides the best possible return for the capital and operating funds invested in it, and the best health care to its community?

These are problems that have a very positive effect on the utilization of health service personnel and on the cost of health services.

Recommendation 46:

That priority be given to the development of continuing studies that will result in the development of design standards that must be incorporated into the basic operational units that are components of all hospitals.

Recommendation 47:

That operational research studies be undertaken on a national basis to determine if possible the minimum, optimum and maximum size of community general hospitals and extended care facilities.

Recommendation 48:

That approval of plans for new hospital construction, and of major renovation programs for existing hospitals, be dependent upon the unit design standards that are developed and on the findings of the studies on the optimum size of hospitals.

H. GENERAL COMMENTS

At the final meeting of the Task Force on Salaries and Wages it was agreed that the most important principles that have been developed to date were contained in the minutes of Meeting No. 5. These are really the principles on which all of the recommendations of this Task Force are based. It was therefore decided that the appropriate excerpts from the minutes should be included as a part of the report to the Committee on the Costs of Health Services.

They are included in the following paragraphs. It is recommended that they be basic considerations in the development of the final report of the Committee.

Important Principles Developed at Meeting No. 5

1) Hospitals Should Switch from Serving Doctors to Serving Patients

This statement was made during a discussion of methods of devising measurements of productivity by a member of the Task Force whose closest relationship to health services in the past has been as a consumer. In his opinion - - and it is shared by many others - - too many hospital activities have been developed around the convenience of the members of the Medical Staff,

rather than as services to the patient. Hospitals strive to serve doctors' needs, rather than patients' requirements.

2) Medical Staff Accountability

The majority of hospital costs are beyond the control of management. These are the costs of direct patient care that are generated through the orders of the physicians who are not employees of the hospital, not accountable for the costs generated and not responsible to management for their actions. There is no control centre for these costs in the hospital, and the only real control is the limit established by the capability of the facilities and the staff to produce the services.

3) Programing of Patient Care

In most provinces, there is at present no planning or co-ordination of the program of diagnostic and therapeutic services provided to a patient. The authority and responsibility for the writing of the orders that initiate each incident in the program at present, rest solely with the patient's doctor, who sees him for only a few minutes each day, and perhaps not at all on weekends. The program is therefore, fragmented, time-consuming and unco-ordinated.

The only member of the health team that is constantly in contact with the patient during his hospital stay is the nurse - and she is not authorized to write orders for tests, medications and treatment that might be required while the physician is not there.

There is a need in hospitals for a programmer or co-ordinator who could plan and schedule a program of care for each patient, based on general written orders provided by the doctor. This Patient Care Co-ordinator should be provided with the legal authority to carry out these responsibilities, including the

authority to move the patient from one unit to another in a progressive patient care system. The mobility of the patient through the system should be maintained through the establishment of control centres.

The most likely person to undertake such responsibilities is the supernurse, the Clinical Specialist. She should follow her patients through the duration of their hospitalization and provide the doctor with the detailed information required for the decisions that require medical judgment.

4) Progressive Patient Care

The most effective use of hospital facilities and personnel can best be achieved through the development of a progressive patient care program, organized in a comprehensive hospital and health care program within a region. Decision making on the progress of a patient through such a system should be based on patient need, and not on staff convenience.

Progressive patient care means that any one patient, in the course of providing for his health care needs, may require a variety in the degree and type of support required to meet those needs. Traditionally, this variation is obtained by moving the patient through a variety of facilities. The operating basis of progressive patient care is a continuing assessment of his health care needs. Thus, there is the requirement for categorization and analysis of those needs through a comprehensive health care approach which takes into account the social aspects and the psychological aspects in conjunction with the therapeutic and investigative requirements of an individual health problem. Thus, the operating principle of progressive patient care should be set in motion not once the patient is in a hospital bed but, rather, when his health care needs are identified and the support measures provided in a health care centre (hospital) are brought into play to meet those

needs. Nor does progressive patient care end when the patient is discharged from the hospital bed but, rather, follows him to his community readjustment through home care programs, ambulatory care clinics, follow-up visits, continuing social and welfare case work follow-up, etc. These measures are devised to provide continuing but diminishing support as the patient progresses in the adaptive process of adjusting to his health problem. In its broadest sense, this comprehensive approach with its emphasis on continuity of care, represents progressive patient care.

5) Relationship between Facility Design and Operating Costs

The capital costs of hospital construction are equalled every three to four years by the operating costs of the facility. The approval of hospital plans that do not provide for the most efficient use of personnel, and that maintain the use of old buildings that are expensive to staff, adds greatly to the cost of health care. More operational research and the development of efficient standard plans for health care facilities is required.

There followed a general discussion of the major factors that had been identified as contributing to inefficiency in hospitals, and of steps that might be taken to counteract them. The most serious problems appear to be:

- 1) The lack of financial accountability to the hospital by the members of the medical staff.
- 2) Traditional patterns of medical and nursing practice are allowed to over-ride the need for the application of modern management techniques.
- 3) Financial restrictions prevent the modernization or replacement of old and inefficient hospital facilities.

Several suggestions for improvement that would result in short term cost reductions were discussed:

1) Management Audit

Unskilled or ineffective management in hospitals results in the inefficient utilization of staff and facilities, and excessively high operating costs.

Under Federal-Provincial hospital insurance regulations, good financial audit procedures have been developed in all hospitals. It is recommended that equally good management audit procedures now be developed. These should be based on such factors as the objectives that have been established for the institution, the human and financial resources that have been made available to it, and how effectively these have been used. Such management audit programs could be organized on a regional or provincial basis, utilizing such resources as consultative services and management review programs. This would, in effect, establish an accreditation program for hospital management.

2) Amalgamated Capital and Operational Budget

The present practice of separating capital and operational budgets for hospitals perpetuates inefficiency. The amalgamation of the two is essential in global or block budget systems. This would enable management to make capital expenditures to realize savings on personnel costs.

As an example, it was indicated that in one hospital, the capital cost of converting elevators from manual to automatic operation would be paid off in five years through salary savings. The conversion has not been carried out because the hospital would be required to invest a considerable and unrecoverable sum of money in the capital cost, while the provincial hospital insurance program recovered the savings.

A more simple example is the saving of the salaries of two nurses on an intravenous team through the purchase of electrically-operated "scooters" for the members of the team.

3) Need for Operational Research

The Task Force on Salaries and Wages once again stressed the need for well-organized and co-ordinated operational research programs which have as their objective, the development of better systems for the provision of health care.

REFERENCE MATERIAL

In the discussions that led to the recommendations made by the Task Force on Salaries and Wages, reference was made to a wide variety of material that is available on the subjects under discussion. Among these publications were the following:

1. Timing Studies of Nursing Care in Relation to Categories of Hospital Patients - MacDonell, Brown and Johannson
2. Règlements des Lois Des Hôpitaux - Province de Québec
3. Collective Labour Agreement - Quebec Hospital Personnel
4. Classification et Fonctions du Personnel Infirmier des Hôpitaux - Québec
5. Reimbursement Incentives for Hospital and Medical Care - U.S. Department of Health, Education and Welfare
6. Report of the Secretary's Advisory Committee on Hospital Effectiveness - U.S. Department of Health Education and Welfare
7. A Systems Approach to Regional Medical Program Planning - David Gustaffson, Ph.D. and Gerald Nadler, Ph.D.
8. Statement on Financial Requirements of Health Care Institutions and Services - American Hospital Association
9. Management by Objectives - George S. Odiorne
10. Tough Minded Management - J.D. Batten
11. Hospital Utilization Review Manual - University of Michigan Medical Centre

12. Report of the Royal Commission on Health Services - Queen's Printer
13. Canada Department of Labour Library - Hospitals
14. Canada Department of Labour Library - Wages and Hours - Hospital Employees
15. Hospital Utilization Review Manual - Michigan State Medical Society
16. Wages, Rates, Salaries and Hours of Labour - Canada Department of Labour - Report No. 50
17. Working Conditions in Canadian Industry - Canada Department of Labour
18. Guidelines for Qualifications and Functions, Hospital Nursing Service Personnel - Canadian Nurses Association
19. United Nurses of Montreal - Collective Agreements
20. Hospital Operating Statistics - Ontario Hospital Services Commission
21. Regionalization and Rural Health Care - McNerney and Riedel
22. Progressive Patient Care - An Anthology - Lewis E. Weeks and John R. Griffith

BACKGROUND PAPERS

During the deliberations of the Task Force a number of members of the group prepared or provided background papers dealing with specific studies required for the proper consideration of personnel organization and management. The following are attached, following Appendix B.

A. Regional Organization

1. Position Paper on Hospital Regions and Systems - Dr. J.D. Wallace
2. Provincial Hospital Systems - Dr. J.D. Wallace
3. Regional Hospital Planning - Mr. E.V. Wahn
4. Structures du Centre Hospitalier - Mr. Paul Pleau

B. Management

5. Management - Dr. A. MacDonell
6. Can Ottawa Break the Log Jam? - James A. McNab
7. Team Approach to Patient Assessment - Dr. J.A.K. MacDonell
8. Productivity Standards for Patient Needs - Dr. J.A.K. MacDonell
9. Multi-Hospital Management Engineering Programs - Fred R. Babbie

C. Personnel, Salaries and Wages

10. Personnel Administration on a Regional Basis - J.D. Snedden
11. Wage and Salary Administration - P.G. Schwindt
12. Fundamentals of a Modern Salary Program - G.E. Fetherston
13. Hospital Staff Complements - A.C. Laugharne

1. POSITION PAPER ON HOSPITAL REGIONS AND SYSTEMS

At the meeting of the Committee on the Costs of Health Services held in Ottawa on April 28th and 29th, 1969, there appeared to be some concern on the part of representatives of several of the smaller Provinces on the question of regional organization of hospitals and other health services. There also appeared to be a difference of opinion between two of the Task Forces concerning the relationship of public health, or community health, to the hospital system.

As most of the recommendations of the Task Force on Salaries and Wages are based on a regional organization and co-ordination of all health services -- in effect, a health care system -- it was decided that a position paper should be prepared for discussion. Our concept visualizes that regional health authority would have some decision making executive functions as well as a planning and co-ordinating role.

Inter-Provincial Variations

The major problem confronting the Committee in developing a master plan appears to be the wide variation in size, population density and economic conditions encountered in the various Provinces of Canada. For example, population and government expenditures on health in each of our two largest metropolitan areas exceed those of the four Atlantic Provinces and the Territories. The population of either Metropolitan Toronto or Metropolitan Montreal exceeds that of any Province excepting the ones in which they are located.

Their combined population exceeds that of the four Western Provinces. With such wide variations, it is understandable that there is concern when the term "region" is used. One might consider one or even two of the smaller Provinces as a "region" if total comprehensive health care is to be provided. At the other

extreme, Metropolitan Toronto might conceivably be divided into several "regions". The main objective of the regional concept is to do away with the fragmented organization based on individual autonomous hospitals and other health facilities and at the same time establish control at a level close enough to the consumers of services to assure a grass roots contact. It may be that we should be using the term system rather than region.

Whatever term is used, it should indicate the inclusion of all available health facilities required to provide comprehensive health care to those persons residing within its boundaries -- special hospitals, referral hospitals, community general hospitals, extended care and rehabilitation centres, hostel accommodation, nursing homes, community health units, home care programs and all other related services.

Alternative Organizations

1. Health Regions

Regional development has occurred voluntarily or by legislative means in other government financed community services such as education and municipal government. If one is primarily interested in economy, these are probably not good examples. However, an uneducated overview of the situation would indicate that the fault lies in a lack of overall control -- particularly in education -- that has allowed the situation to get out of hand and run wild. There would appear to have been little attempt to avoid unnecessary duplication in these regions if the number of lavish auditoriums and gymnasiums in neighbouring school facilities is a significant indicator. I believe that we could do better than that in a health care region.

The primary advantage of a health care region would be the ability to plan, co-ordinate, finance and operate an organized group of facilities and services

within a specified geographic area. This would facilitate a close relationship with the authorities responsible for other community services that have health components -- for example, the education system and the civic government organization.

Depending on population and urbanization, the region might correspond to a Province, a county (or group of counties), a city or a borough. To ensure close co-ordination, there should be representatives of the civic government concerned, and the educational authority, on the Regional Board. There should also be representation from the Boards of the various hospitals and health services in the region, and from the local Medical and Nursing Societies, on the Regional Board. For liaison purposes, the Provincial Authority should also be represented.

2. Hospital Systems or Health Systems

If the regional concept is not acceptable, the next best alternative would be the development of Hospital or Health Systems. Under such a program, groups of hospitals and other health services would be organized under a charter to provide as broad a spectrum of care as possible to the residents of the area served. The charter would provide some central authority over planning and development and would be responsible for centralized management and consultative services to back up the human resources available in each unit. It would also make provision for the development of centralized data processing, purchasing and other hospital services. Mutually acceptable medical staff appointment procedures and medical record systems could be developed to avoid bottle-necks and encourage the free flow of patients through the system with a minimum of delay and unnecessary paper work.

Where possible for mutual assistance, such a system should provide as broad a coverage of facilities

as possible -- referral, special or teaching hospital, community hospitals, extended care facilities, nursing homes, community based medical clinics, home care programs and so forth. Where no major teaching or referral hospital is available in the area served by the system, the necessary two-way referral mechanisms should be set up with such an institution in a neighbouring area.

3. Hospital Mergers

If all else fails, hospitals should be encouraged by financial and other incentives to develop mergers. This is happening with increasing frequency in the United States. If carefully planned, mergers do improve efficiency and economy of operation by avoiding costly and unnecessary duplication of management, consultative and professional personnel, and a better utilization of facilities. One super hospital organization enables the Board and Management to develop one good department out of two or three mediocre ones, and to provide a complete progressive care system under one administrative umbrella. The physical plants of the "merged" hospitals can be identified for specific purposes -- active treatment care, ambulatory care and hostel accommodation. The community is provided with better service through larger and better staffed emergency and ambulatory clinic facilities. The facilities need not be completely adjacent to each other but they cannot be too far removed because of the reluctance of members of the Medical Staff to follow their patients through a widely scattered super hospital.

Conclusions

The recommendations that will be made by the Task Force on Salaries and Wages would be applicable in any of these three alternative organizations. Their potential for economy without reducing the quality of care would decrease as the organization became less comprehensive -- Regional System Merger. However, any

of the systems suggested above would be more efficient than the present array of autonomous hospitals and community health services relating individually to a Provincial Authority in a Province of any size.

J.D. Wallace, M.D.

2. PROVINCIAL HOSPITAL SYSTEMS

The most serious weakness in Canada's national health insurance program is its lack of co-ordination. The basis of the whole operation is the federal legislation -- the Hospital Insurance and Diagnostic Services Act -- which merely provides a set of very broad minimum standards which must be met if provincial plans are to obtain federal sharing. From there on, it is "dealer's choice" at the provincial level and we have ended up with a variety of relatively unco-ordinated plans designed to satisfy provincial rather than national objectives.

Nor do provincial plans make any provision for the development of organized systems. Each individual institution -- general hospital, extended care or convalescent facility, chronic hospital and nursing home -- is considered individually. This has led in most Provinces to an unplanned and unbalanced conglomeration of facilities rather than a system. To date, the accent has been on costly active treatment general hospitals for which little if any back-up of less sophisticated facilities and services has been provided. The inevitable result is poor utilization.

This might be compared in business with the old corner grocery and general store era. In industrial history it probably corresponds to the pre-industrial revolution cottage industry period. The modern counterparts in these fields are the much more efficient (if less personal) supermarkets, and the amalgamated industrial components that provide the assorted parts from which an automobile is finally constructed on a production line. In both business and industry, it has been proven that independently owned units can be organized into an efficient system.

Similarly on a voluntary basis, through the stimulus of centrally applied incentives and/or threats, we could develop an effective hospital system in Canada

that would provide better health care at less cost than is provided by our present fragmented approach. If the voluntary system does not respond at once to this challenge, it could, as a last resort, be imposed by the paying agency, government. However, the voluntary system should be given one last opportunity to respond.

The basic pattern for a national hospital system should be developed centrally through federal-provincial co-operation. It should be standardized across the country to assure that all Canadians receive good health care and that none of them suffer by falling between the coverage offered from province to province. The primary incentive of all -- dollars -- should be used by the Federal Government to encourage provincial plans to standardize and participate.

At the provincial level, government should act primarily as the insuring agency. It should set basic standards and would as well apply financial incentives to encourage individual hospitals to participate in Regional Hospital Systems. It would not become involved in the details of hospital management or budgetting.

The Provincial Hospital System itself should be an incorporated co-operative developed by the Regional Boards as corporate members. Its primary function would be the co-ordination of the activities of Regional Boards, relationships with the Provincial Government and inter-provincial hospital relationships.

The key organization in such a system would be the Regional Hospital Board. It would be responsible for the development of a comprehensive hospital, nursing home and home care system within a region. It would provide a top management team responsible for the operation of all of the individual institutions in the region. It would also have a comprehensive consultative service. The management organization would operate on efficient industrial corporate lines with the administration of

individual institutions in the region responsible to the central agency as branch agencies in business are responsible to their regional or zone offices. The regional board of directors would be the operational board of all member institutions. Local boards would have membership on the regional boards but their local activities would be restricted to those of ownership and not operation.

It would be the responsibility of Regional Boards to plan, organize, co-ordinate and manage the operations of all health facilities in the region. The Chairman of Regional Boards would form the Board of Directors of the Provincial Hospital System which would be the only direct relationship with government health agencies in a Province.

Again, an incentive program should be used to encourage individual hospitals to join the regional system. Construction grants and operating funds should be provided through a new system that would make membership in a regional hospital system attractive, e.g. the distribution of Hill-Burton funds in the United States.

All personnel working in the health facilities within a region would be appointed by, and subject to the control of, the Regional Board. This centralized control would facilitate the development of realistic standards of service and remuneration. It would also avoid unnecessary duplication and provide a better distribution of personnel through a pooling of specialized professional and technological staff. It would encourage the development of centralized services that could serve all member institutions.

The operation of such a system on a voluntary basis would provide the local communities with the benefits of any savings that could be made on the basis of efficient operation. This would encourage Regional Boards and Administrators to develop effective systems

within their areas of jurisdiction. Good management would be rewarded by the development of reserve funds -- poor management would necessitate an appeal to civic government sources for assistance.

In support of the development of such a Canadian Hospital System, I would suggest that the following general recommendations be considered.

J.D. Wallace, M.D.

3. REGIONAL HOSPITAL PLANNING - PALLIATIVE OR CURE?

Based on an Address Delivered by E.V. Wahn
to 1969 Annual Institute
Atlantic Provinces Hospital Association
Halifax, Nova Scotia - May 27-29, 1969

Introduction

I don't suppose there is any single topic that gets more play in the hospital journals these days, or for that matter at hospital conventions or conferences, than the topic of regional hospital planning.

You merely have to thumb through some of the back issues of the Canadian Hospital, Hospital Administration in Canada, or the Journal of the American Hospital Association or glance at a few of the recent conference programs of the various provincial hospital associations, and you'll find support for the statement just made.

The fact that the topic appears on your program today bears further testimony to its popularity. There is a reliable rumour that most of the task forces, which were established several months ago by the joint federal and provincial ministers of health, are going to recommend regional health planning as a cure-all for the many problems which are currently of concern both to those who are responsible for operating hospitals and to those agencies that are obligated to pay for the services rendered in hospitals.

Just last week in Ottawa, many of you heard the Honourable John Munro, Minister of National Health and Welfare, indicate, in rather strong terms, that regionalization in one form or another was inevitable. He stated:

"... let me state plainly that it is my feeling that if the hospitals and other health facilities in this country will not get together to

co-ordinate their services and divide their specialized functions, then my provincial colleagues and I will have to give serious thought to the selective use of government funds to foster this goal ourselves."

His message to hospitals came through loud and clear - either regionalize on a voluntary basis or government will force you into it.

What makes the subject of regional hospital planning so topical? Exactly what do we mean by this term? What's so good about regional planning and is it in fact, going to be the cure-all for the problems presently besetting hospitals that Mr. Munro and his advisors obviously think it is?

How feasible is it, as has been suggested by Mr. Munro, for hospitals and related health institutions to voluntarily get together "to co-ordinate their services and divide their specialized functions"? Is this merely wishful thinking on his part or is it a practical possibility? How feasible is his alternative, the compulsory approach? Well, these are some of the questions I want to talk around this afternoon. It would be nice if some easy, rational answers came out of our discussions but I rather doubt that many will.

At the outset, I think I should warn you that I am not at all competent to talk on this particular subject. Until I accepted the appointment of Executive Director of the Metropolitan Toronto Hospital Planning Council about four months ago, I was living an ivory-towered existence lecturing to students in a university school of business on such crass subjects as law, labour/management relations and business policy.

In these fields I claim to possess some degree of competence and I must confess that I would feel somewhat more confident that you were going to get your

money's worth had my subject this afternoon related to any one of the three mentioned.

If you are wondering what prompted me to accept an invitation to talk on a subject about which I was not particularly knowledgeable, let me just say that I thought it would provide an opportunity for me to clarify some of my own thoughts on regionalization. The one thing I have observed after my short four months experience, is that everyone I have talked to appears to be almost as confused as I am about the subject. I have interviewed a lot of people and everyone seems to pay lip service to the concept of regionalization and the benefits which will accrue from it; but, when pressed for answers to some of the questions which are puzzling me, my interviewees smile tolerantly and steer the conversation to some other subject.

Well, as I have indicated, I don't think many answers will come out of our discussions this afternoon, but perhaps my remarks may provide you some food for thought.

What is Regional Hospital Planning?

The first matter I would like to explore rather briefly this afternoon is a question in terminology. What do we mean by the term, "regional hospital planning"? Words and combinations of words mean different things to different people, and it may be that many of you will not agree with the meaning I give to the term. However, at the moment, I have the soap box and, for the purpose of this discussion, I intend to use the term in the following sense. It is an approach or variety of approaches which recognizes that, in this day and age, if community needs for comprehensive hospital care and treatment of a reasonably high quality are to be economically met, planning to meet these stated objectives must be community need oriented and not institutional growth need oriented.

I freely admit that this capsule definition is far from perfect on several counts. It is for this reason that I would like to take a few minutes to elaborate on the definition.

First of all, let me speak to the term "community need oriented". This term, in the context in which I am using it, implies that if more than one hospital or related health institution is presently attempting to satisfy the health care needs of a particular community, then all such hospitals or health care institutions have the obligation to jointly determine the health care need in the community and, subsequently, jointly reach some decision as to how this health care need can most economically be satisfied within the limits of financial and other constraints.

I want to stress this "community need oriented" aspect of my definition, if only because of my rather strong view - which some of you assembled here may not share - that the planning presently being engaged in by most hospitals is not community need oriented; it is institutional growth need oriented.

I say this with the full awareness and knowledge that most hospital boards and their administrators in all parts of Canada go through the motions these days of employing consultants who make population forecasts, conduct patient-origin studies, analyze utilization experience and the like. In the final analysis, what happens - and you know this as well as I - is that the program of expansion finally approved by the board for submission to the appropriate provincial authority reflects only the needs of the community as subjectively determined by the various individual department heads of the hospital.

The surgeon, the paediatrician, the internist, the radiologist and the others submit their "wants" to the consultant and/or the administrator. These wants

are then totalled. If the total exceeds the financial resources available, some compromises are ultimately achieved, inevitably, I might add, at the expense of the department head with the least bargaining power.

I am by no means suggesting that the surgeon, the paediatrician and other department heads do not have some subjective evidence on which to base their requests, nor do I suggest that they are not acting in good faith. I am sure they are, but I am just as certain that in most instances, the "want" list as eventually totalled and which forms the basis for the hospital expansion program does not truly reflect community needs.

One of the main reasons why it does not reflect true community needs is because the department head of that particular hospital is not aware that his counterparts at another hospital serving the same community are, at the same time, engaged in developing their own "want list" based on their interpretation of the need existing in the community. The combined "want lists" and true community need can never be in balance.

The community need oriented approach requires, as I have mentioned, that the determination as to need be made by the several hospitals and related health institutions serving the particular community. It requires, further, that this need be met through a broad spectrum of program and facilities.

Due emphasis must be given to prevention and active treatment in-patient program which must be balanced and integrated with programs intended to meet the needs of the chronically ill, the convalescent and the nursing home categories of patients. Appropriate emphasis must be placed, too, on the development of adequate home care, ambulatory and emergency treatment programs.

It is obviously impossible for any one institution to satisfy the need for such a broad spectrum of services. This makes it imperative that close working relationships be fostered, not only between the various hospitals in a particular community, but also between these institutions and others located elsewhere in the province.

The theoretical, regional model, with which you are all familiar, describes the types of relationships which, desirably, should be developed. It is envisaged, under the regional model, that residents will look first to their local community hospital for bread and butter hospital active treatment services. When active treatment is no longer required, patients should either be discharged to chronic, convalescent or nursing home institutions located in close proximity, or treated on a home care, day care, or out-patient basis.

If the illness is of a kind which demands more comprehensive and more complex active treatment care, the patient will, under the regional concept, be referred to a better equipped and better staffed district hospital. Serious cases demanding facilities and trained personnel not available at the district hospital will be referred to the regional or base hospital. In summary, the regional concept implies both vertical and horizontal integration of facilities and services.

There is one other aspect of my definition which I would like to comment on. It is my deliberate use of the phrase, "variety of approaches".

Variety of Approaches to Regional Planning

It is pretty clear to me, even with my limited experience, that there may be many different approaches based on the regional concept, any one of which, theoretically at least could achieve the objective of providing comprehensive hospital care and treatment of

reasonably high quality at an economical cost. In Canada, three distinctively different approaches can be identified. I want to take a few minutes to describe these and, later on, I'll try to evaluate them.

The first approach, which I will hereafter refer to as the CRP approach, is not at all new. It dates back to 1948 and the commencement of the federal government construction grant-in-aid program. Each of the provinces, under the terms of this program, was required to develop a so-called master plan or blueprint designed to achieve a network of integrated hospital facilities and services. Although I am not absolutely certain on this point, I think I am correct in stating that, without a single exception, all of the provincial plans were based on either a three or four tier regional concept.

It was envisaged that patients requiring essential hospital care and treatment would move through a system embracing community district, regional and base hospitals. It was generally accepted that there should be no mandatory requirement for a patient to be admitted to any particular institution and it was recognized that even the regional and base hospitals would be providing bread and butter services as well as acting as referral centres handling the difficult and complex cases.

It should be noted that in the early years of the CRP approach, the emphasis in planning was on the vertical integration of active treatment facilities. It is only recently that the horizontal aspect of the regional concept has been stressed.

Later on in my paper, I want to make some comment concerning the effectiveness of the CRP approach. Let me just say now that it is the predominant approach toward regionalization being followed in Canada. Logically, it might have taken two forms.

A regulatory planning agency, completely divorced from the Department of Health or the Hospital Insurance Commission, could have been established; but none of the provinces elected this option. Instead, the form adopted by all provinces delegated the planning function to full time employees employed by the Department of Health or the Hospital Insurance Commission.

Consequently, unlike other regulatory commissions such as the Canadian Radio-Television Commission and the Canadian Transport Commission, there is no provision for open hearings at which anyone who has a vital interest or thinks that he has, can challenge the planning decision on the grounds that it is not community need oriented or that it adversely affects his own or the public interest.

It is true that there is provision for the use of advisory committees, composed usually of representatives of vested interests, but the contributions and effectiveness of these committees have not been significant. It is probably true, also, that the provincial hospital and medical associations have played a watch dog role but it is very doubtful if this role has been one intended to protect the public interest.

The second approach, which I will designate the Voluntary Approach to Planning, or VRP, historically predates CRP and has to a large extent been replaced by it, but still exists in some form in all parts of Canada. It was undoubtedly community need oriented initially and retained this flavour until a community had grown large enough to support the development of two or more hospitals.

Once there were two hospitals, planning ceased to be community need oriented and became institutional growth need oriented. This statement should not be taken out of context. It in no way implies that the VAP approach has not, in some respects, in the past and

cannot in the future contribute toward the achievement of a desirable level of integration and co-ordination of hospital services.

I am not familiar with the activities of voluntary local and regional hospital councils in the Atlantic provinces, but I do know from my own experience how successful some of the shared programs sponsored by these councils in Saskatchewan and Metropolitan Toronto have been. There are a number of such councils in Saskatchewan which are still very active.

They have been very effective in fostering effective shared regional programs in such services as pharmacy, dietary, radiology and pathology. Similarly, in Metropolitan Toronto, successful shared programs have been developed in such services as laundry, linen supply, purchasing and nursing education.

The third approach, which I will refer to as the Decentralized Compulsory Regional Approach to Planning, or DCRP, can also be traced back to the years before 1948. After that year, it was largely replaced by CRP although it still exists in some form in western Canada.

This approach has been more popular in the prairie provinces than elsewhere in Canada, particularly in the Province of Saskatchewan. Legislation has been in effect for many years in that province which delegated to regional boards of one kind or another the responsibility for building and constructing hospitals, for administering prepaid hospital and medical insurance programs, for operating regional public health programs, etc.

The regional hospital insurance programs went out of existence when the provincial scheme came into effect in 1947, but, interestingly enough, the Swift Current regional medical care plan, which has been in

effect since 1946 is still operative even though a province-wide compulsory medicare plan was inaugurated in 1962.

The union hospital programs never really achieved regional proportions but some of the districts are quite large. There is more than one example of a union hospital board which administers as many as three small hospitals scattered through the district.

There does seem to be a resurgence of interest in this approach. I am not completely informed as to details but my understanding is that there is now statutory provision for the establishment of regional hospital boards in the province of British Columbia.

Unlike the regional boards in England, to which are delegated the responsibility for both the planning of hospital facilities and the administration thereof, the British Columbia boards are mainly concerned with the planning function.

Effectiveness of Existing Regionalization Programs

I have indicated that any one of the three regional approaches mentioned could, theoretically at least, serve as the means of achieving the objective of providing comprehensive hospital care and treatment of a reasonably high quality at an economical cost. But *quaere*, do they, and if not, why not?

Let me first of all comment on VRP, the voluntary approach. Philosophically, this is the approach which most of us would favour. It would be comforting to believe that representatives of the various types of hospitals serving a particular area could sit down together and objectively determine the health care needs of the residents of the area and then develop a joint program directed towards the maximization of need satisfaction.

But how does the record read? I submit that, although not completely blank, the voluntary approach has not resulted in any significant achievements in late years. It is true that there have been a number of successful shared programs but success has only been achieved because these programs have supported, rather than threatened, the main goal of the participating institutions.

It is all too frequently mouthed that the main goal of a hospital is to meet the community need for patient care, research and education. This is not so. The main goal, let's honestly acknowledge it, is to satisfy the inherent growth needs of the institution and the constituent members thereof.

Despite the fact that it has not worked as well in recent years as all of us would have liked, we should not write off the voluntary approach. I submit that the main reason for its failure is because there has been a noticeable lack of broad, community representation on the formally structured planning council or at the informal planning sessions. I am not certain that there has to be, as is the case in most jurisdictions in the United States, a 51% or better community representation but certainly a better balance has to be achieved than has been the usual Canadian experience.

There are some of you who will argue that hospital trustees can and do represent the community interest. This is not so. The Honourable Mr. Munro made a perfectly valid point last week when he pointed out that most boards do not represent a broad cross-section of the community. There are no representatives of the poor and membership for the most part is extended only to influential citizens.

But even if they were more broadly representative of all interests in the community, the fact would still remain that trustees of a particular hospital are,

in most instances, as firmly committed to the inherent growth needs of the institution they represent as is their administrator and members of the medical staff. The usual trustees represent the community only when community needs and the needs of the particular hospital are not in conflict. But, inevitably, they are in conflict.

What about the CRP approach which is, as has already been stated, the predominant approach being followed in Canada. There is certainly a lot to be said in its favour. Constitutionally, each of the provinces of Canada has jurisdiction in the field of hospital care and treatment.

In proper exercise of this jurisdiction, each of the provinces during the past ten years or so, has devoted a substantial amount of its resources to underwriting the cost of providing hospital care and treatment services to all eligible residents and to providing generous grants-in-aid to encourage the construction of proper facilities wherein these services may be provided.

From the standpoint of the legislators, what more natural than to turn over to a central regulatory agency the responsibility for determining hospital care and treatment needs and for developing a system of rational priorities to guide future development of the needed facilities? Certainly, it would seem reasonable to believe that qualified and competent planners employed by the central regulatory agency should be able to develop a rational plan for achieving a balanced and integrated hospital system.

I don't quarrel with this logic but the fact remains that ten or more years of CRP rule has passed and we are still a long, long way from a balanced and integrated system. What has gone wrong?

I don't believe that you can fault the regional model which has been the core of the CRP planning process.

It makes good sense to have a hierarchy of hospitals just as it makes sense to have a hierarchy of courts and a hierarchy of educational institutions.

Bread and butter hospital care and treatment should be available within easy reach of every resident, and yet it is obviously beyond the limit of the resources of any province (even that favoured province, Ontario) to provide a full range of specialist services except in one or two centres of the province.

This is not to suggest that the citizen who lives a long way from the specialized referral centre should be denied service. Certainly, he is entitled to the best care which is available within the province and this means that proper provision for essential air and road ambulance service must be incorporated into any rational regional plan.

Nor do I think you can lay all of the blame at the door of planners attached to the central regulatory agency. Some of them may appear a bit high and mighty at times but most of them are well qualified, competent, dedicated and well motivated. If any blame attaches to the central agency planners, it is because they like the legislators, have failed to appreciate the simple, crucial fact that no matter how well designed and logical a plan is, it will not work and cannot be successfully implemented unless and until it gains general acceptance by those people whose obligation it becomes to implement it.

The required level of general acceptance has not been secured under the CRP approach. What has, in fact, happened is that hospital expansion programs, based on "want lists" rather than "community need lists" have been prepared and submitted to the central regulatory agency for rubber stamping.

If these were not rubber stamped because they failed to conform to the master plan designed by the planners, manoeuvres started. The hospital representatives called in their support troops, the local and provincial politicians, and eventually the planners were forced into retreat. When truce was called, the lines on the master plan had been radically modified.

In marketing any new product, the enlightened manufacturer knows that in order to gain public acceptance for his product, he necessarily has to advertise and conduct an educational program. Had the planners and the legislators done a better educational job, undoubtedly the CRP approach would have been more effective than it has been.

But, nonetheless, it is my strong personal belief that the goal of a balanced and integrated regional hospital system could still not have been achieved. I would argue that the necessary degree of public acceptance could not be gained unless those persons who ultimately had the obligation to implement the plan were actively involved in the preparation of the plan.

This, as I see it, is the inherent defect in the CRP approach. The plans have been developed at a high level and this has been so no matter how extensive advisory committees of one kind or another have been utilized. Planning on high is simply not accepted in this day and age as witness the protest movements in the family, the universities, political parties and you name it. Planning, if it is to be successfully implemented, must actively involve the doers.

I don't know too much about the situation in any one of your four provinces. I would conjecture that the CRP approach probably comes closer to achieving the objective than it does in a larger province where the planners are further removed from the doers. But I would still venture a guess that, for the reason I have

mentioned, the CRP approach still leaves much to be desired.

What about the DCRP approach? As I have previously indicated, apart from Saskatchewan and a couple of the other western provinces, there is not much by way of Canadian experience to rely on. I do not profess to be very knowledgeable about the British experience but from the people I have talked to I rather gather that the delegation of the responsibility for planning and administration to regional boards has not proved to be the complete answer.

The regional program recently instituted in British Columbia is, as I understand it, running into some snags, but these may be of a kind which you would naturally expect of any new program which is undertaken.

Looking outside the hospital field, we can observe the current trend toward the establishment of regional systems of municipal government and regional systems of school administration. In industry also, in recent years, there has been a significant trend toward amalgamation and the horizontal, vertical and lateral integration of business firms. I must confess it seems entirely logical to me that, as transportation and communication facilities improve, the trend should be toward the establishment of larger municipal units, larger school units and larger business firms.

The establishment of regional systems of local government and regional systems of school administration is still being resisted in some quarters but the pendulum appears to be swinging in only one direction. It will take longer, perhaps, but it seems inevitable to me that the time will eventually come when it can be anticipated that duly constituted, regional health care boards will be established in most jurisdictions in Canada.

These boards will be charged with the statutory responsibility for evaluating the health care needs of residents living within their respective districts and charged also with the obligation of administering a number of hospitals and related health care institutions.

My own personal view is that, despite my prediction, the time is not yet at hand for any forced development of this kind. I will have more to say about this later.

The Status of Regional Planning in Ontario

One of the reasons why I was invited to participate in your convention proceedings was to give you some idea as to what, if anything, was going on in Ontario. So far, as you will have observed, I have been very careful to evade this subject. I can leave it no longer.

As a starting point, let me say that the pre-dominant approach in Ontario, up until two or three years ago, was the CRP approach. I may be wrong in this assessment but from what I have been able to ascertain since my arrival in Ontario three or four months ago, it apparently became obvious to the Minister of Health and the senior officials of the Ontario Hospital Services Commission about three years ago that the plans being prepared by the central regulatory agency (which was the Ontario Hospital Services Commission) to serve as the blueprint to guide the development of an integrated and balanced hospital system throughout Ontario were not gaining public acceptance by the hospitals.

Hospital authorities were making their own determination of community need but this evaluation, as I have earlier suggested, was not really objective in nature. It was essentially an expression of the institutional growth needs of the particular hospital.

But the fact that they were afflicted with what has been described as institutional myopia was not

recognized by the hospital representatives and, in good faith and with the best of intentions, they pulled up their shirt sleeves and swung into action when the validity of their plans was questioned by the regulatory agency. Here was something a trustee, in particular, could get his teeth into.

He may have had reservations at times when he studied the want list presented by the medical department heads but had had no alternative, or so he thought, but to finally accept the want list as gospel. But when it came to dealing with bungling beaurocratic planners, he knew how to go about his job. Here was a challenge to his liking. In most instances, he did his job as trustee well. But planning based on need suffered as a consequence.

To make a long story short, the Minister finally decided that something had to be done to involve the doers in the planning and something also had to be done to ensure that community interests were more broadly represented as well.

He moved first in Metropolitan Toronto. He established the Metropolitan Toronto Hospital Planning Council and saw to it that the membership on this Council represented both special and community interests. Initially, the special interests were in dominance, but since January, 1968, there has been a desirable balance.

Under its terms of reference, the Council has the responsibility of recommending to the Minister and to the central regulatory agency, which is still saddled with the statutory responsibility, the manner in which a balanced and integrated hospital system may be achieved. It has the obligation to ensure that all expansion programs submitted to the central regulatory agency do, in fact, reflect community needs and not just institutional growth needs.

Since the establishment of the Metropolitan Toronto Hospital Planning Council, seventeen or eighteen other councils have been established in Ontario. These have not been established by ministerial order, as was the first, but rather by the central regulatory agency. Their terms of reference are similar to those of the Metropolitan Toronto Planning Council, but most of them, as of now, do not have what I would regard as a desirable balance between special and community interest groups.

The establishment of regional hospital councils in Ontario is, in effect, an attempt to remedy the inherent defect in the CRP approach. You could call it a modification of CRP but I would prefer to refer to it as an amalgam of the CRP and VRP approaches.

It may not prove to be the answer and it may be, as I have suggested earlier, that inevitably the approach followed in Ontario and elsewhere will be an amalgam of the CRP and DCRP approaches. But I am satisfied, in my mind at least, that this is the desirable approach in Ontario at this particular moment in time.

Quite frankly, I think they are going to experience difficulties in British Columbia for a considerable period of time, but perhaps my theories relating to the desirable evolutionary stages of growth are not as plausible as they might be.

A fair question that might be asked is why a voluntary regional council, without any teeth, is going to prove to be more effective in accomplishing its objective than the central regulatory agency. Isn't such a regional planning council going to be subjected to similar pressures by representatives of hospitals as those experienced previously by the central regulatory agency planners? Is it not possible that the Minister of Health and his cabinet colleagues will have to wilt under these pressures also?

I think there are a number of reasons why a strong regional council, as it uses the right approach, can be more successful in achieving the desired goal than the central regulatory agency. First of all, the Council is not a branch of government but is, or should be, a quasi-public organization with broad community representation.

Although reporting to the Minister, the Minister is in the position where he doesn't have to answer to any criticisms about its activities to as great an extent as he would to an agency established under a direct line relationship.

In many respects, the Council can serve as a buffer, much like the favourite ploy of governments, the royal commission. The Minister can disregard the recommendations of the Council, but if he elects to accept them, he is not subject to the same criticisms from those vested interests which may be adversely affected by the recommendations.

But a second, and more important reason lies in the approach which can be followed by a voluntary regional council but cannot be as easily pursued by any government agency. Let me cite an example that may serve to illustrate what I mean.

Our Council has decided, as a means of facilitating hospital planning in Metropolitan Toronto, to urge various types of hospitals and related health care institutions to get together and form areawide planning committees.

To get things started, Council staff did indulge in some high level planning and ended up delineating five community health planning districts. These districts are only tentatively delineated at this stage but, already, trustee, medical staff and administrative representatives of the active treatment

institutions in three of the districts, convinced that the concept has merit, are sitting down together and looking at information relating to population projections, utilization experience and patient origin data.

These institutions are furnishing one another with details concerning their short and long range plans and, already, in one of the districts, there is some indication that plans may be modified to better reflect community needs.

I can't report that we have come very far yet, but I am satisfied that this approach will work, given a Council that is strong enough to refuse to put a rubber stamp on any expansion program submitted by a hospital until the merits of such program has been thoroughly debated by the representatives of the hospitals and related health care institutions located in the particular community health planning district. This approach, if it is to be successful, will demand a very considerable investment of time by trustees, administrators and particularly members of the medical staff.

Many representatives will begrudge the amount of time that has to be expended, but those who really believe the patient comes first and, who believe in the voluntary approach should be more than ready to make the sacrifices which may be entailed.

No matter how much time is spent at the area-wide planning meetings, there are going to be many instances in which no consensus is reached concerning community need and how this need can most effectively be met. This means that the Council will have to fill an arbitrator role. But it can hopefully be anticipated that the final Council decision will be more acceptable because of the prior active involvement in the planning by representatives of those hospitals who are obliged to satisfy the need.

The strength of the Council, using this area-wide approach, has not yet been fully tested but I am satisfied that, as presently constituted, it can withstand the pressures which are bound to come as a result of adopting this approach.

It is not, as I have suggested, the type of approach that could be followed by a central regulatory agency. It is not an approach that will be easy for anyone - the hospital representatives, the Council members, council staff, the Minister, or officials of the Ontario Hospital Services Commission.

But it is a voluntary approach that does recognize that community need must be met as economically as possible and further recognizes that the doers should be actively involved in any planning intended to satisfy this community need. If the approach does not work, the alternative is that contained in the threat of the Honourable Minister of National Health and Welfare which I alluded to at the beginning of this paper.

Summary

In this paper, I have suggested that there are three approaches to regional planning, none of which are new and any one of which could achieve the objective of fostering a balanced and integrated hospital system. I have described these approaches as if they existed in pure form, but the fact of the matter is that they have existed in combination. The predominate one since 1948 has been CRP approach and I have pointed out that this type lends itself to the development of a hospital system based on institutional growth needs rather than on community needs. I have described the modified approach presently being followed in Ontario and more particularly in Metropolitan Toronto.

It is yet too early to say, but I believe that the modified approach being followed in Metropolitan

Toronto will result in a better integration of hospital facilities and services. If it does not, the fault will not be because there is not a strong Council.

The fault may lie with the present Executive Director, and if it does I am sure the Council will see to it that a more able one is found to replace him. If, despite a strong Council, the voluntary approach fails, then maybe the time has come for the hospital representatives to admit they are not prepared or not able to devote the time required to develop a plan which is aimed at satisfying true community need.

It may be the time then for the Ministers of Health of the various provinces to act on the implied threat of the Honourable Mr. Munro to institute compulsory regionalization "if the hospitals and other health facilities in this country will not get together to co-ordinate their services and divide their specialized function".

It has been a pleasure to attend this meeting. I have enjoyed the opportunity to participate in the convention proceedings and I sincerely hope I will be invited back on some future occasion.

4. ORGANIZATION OF THE HOSPITAL CENTRE

In considering the hospital centre as a progressive care community centre, we implicitly recognize the importance and necessity of a strong and well-organized corporation having a certain well defined autonomy and wide participation by a number of elements representative of the community of which the centre is a part, and being a partner of the state as well.

Such a corporation should enjoy the administrative and medical autonomy necessary to its survival, and be composed of decision-making and executive bodies. It should have its own property and should establish its budget, to be reimbursed under a grant system, because it will comply with the rules of public accounting. The corporation should be composed of persons who could vary in number from nine to twenty-one, selected in the following manner:

- a) one-third of them appointed for a three-year period by the Lieutenant-Governor in Council, following consultation with the municipal and school authorities of the area served by the hospital centre;
- b) one-third appointed for a three-year period by the Lieutenant-Governor in Council, following consultation with socio-economic organizations of the area served by the hospital centre;
- c) one-third appointed for a one-year period by the Lieutenant-Governor in Council and selected by the professional health staff of the hospital centre.

However, in order to be efficient, all the resources of the hospital centre should be centred on

activities and such activities should also be directed towards fully meeting the objectives of the institution. For that reason, it seems logical to insist on the principle of an administrative unit as an indispensable means to ensure the concordance and coherence of the objectives on which activities and resources are based. As management is the art of making others achieve the objectives of an enterprise, such achievement gives rise to a formal communication network for purposes of informing, instructing, correcting and coordinating. If specific objectives are to be attained, such communication cannot be haphazard. It must be channelled and such network results in a structure found in all enterprises.

A large portion of administrative discrepancies and difficulties in institutions is due to a defective structure. In fact, the question arises how an authority or responsible body can plan, organize and particularly, direct and control resources over which others also have power of management, decision-making and supervision. Without such an overall administrative unit, there is incoherence and inconsistency incompatible with attaining specific, coordinated and convergent objectives.

In the hospital centre, the powers of the corporation should therefore be vested in a strong, powerful Board of Directors, solely responsible for promoting the objectives of the corporation. That Board of Directors should be composed of nine members selected by the corporation among its own staff.

- a) One-third would be appointed for a three-year period and selected from among the third of the corporation members appointed by the Lieutenant-Governor in Council, following consultation with the municipal and school authorities of the area served by the hospital centre;

- b) one-third would be appointed for a three-year period and selected from among the third of the corporation members appointed by the Lieutenant-Governor in Council following consultation with the socio-economic organizations of the area served by the hospital centre;
- c) one-third would be appointed for a one-year period and selected from among the third of the corporation members appointed by the Lieutenant-Governor in Council and selected by the professional health personnel of the area served by the hospital centre.

Care should be taken that at least one medical doctor is one of the three members appointed to the Board of Directors and selected by the professional health personnel of the area served by the hospital centre. If such a condition is not satisfied, the Lieutenant-Governor in Council would then have discretionary powers to appoint at least one medical doctor to the Board of Directors of the hospital centre.

In order to fill its role adequately, the Board of Directors should be assisted by an advisory body and executive officers. The advisory body would be the "Medical Board". The Medical Board would be essentially responsible for supervising the quality of medical and paramedical activities and for making, to the Board of Directors, any recommendations relevant to any medical or paramedical matter. The Board would be composed of medical doctors, exercising their profession at the hospital centre and, in a proportion to be determined later, of professional health staff employed there according to their qualifications. Designed in such a fashion, the Medical Board differs from the medical board recognized by the Hospitals Act, and would be a body, dependent upon the Board of Directors, and whose purpose would be to advise rather than to direct

Following consultation with the Medical Board, the Board of Directors should appoint its authorized representative, called the General Director, who would be responsible for carrying out the decisions of the Board of Directors and for exercising all powers necessary to that purpose.

Following consultation with the Medical Board and the General Director, the Board of Directors should appoint a Medical Director responsible to the General Director and responsible for any medical matter other than the quality of medical performance.

This organization of the hospital centre, as will have been noted, is not being suggested for a particular type of hospital centre. We have not yet mentioned a specialized hospital centre, and intentionally, because in our minds, the type of organization designed for a hospital centre is not a function of specialization, but results from a new concept - the integration of health centres. However, by analysis, we are brought to realize that the proposed type of organization is perfectly compatible with any hospital centre, which indeed supports the fact that it is both flexible and efficient. In fact, why should the organization of a specialized hospital for treatment of children or mental patients differ from that of a general hospital centre? If we accept the principles of integration and unified authority, all hospital centres meet the same requirements.

Paul Pleau

5. MANAGEMENT

At present the approach to the health care needs of the community is fragmentary at best, with hospitals, provincial and municipal health and welfare departments etc., each operating a jealously guarded realm, often duplicating what another agency is doing. Given effective management it would be logical to consider and identify the total health care requirements of the community. Then using hospitals as the focal points develop health care centres providing comprehensive services - home care, rehabilitative, diagnostic, therapeutic, psychiatric, social - on a regional basis. In this way expensive duplication of highly technical services could be minimized. In this way a means of meeting the variety of health care requirements could be developed.

Obviously, if this objective of providing comprehensive health care services is to be attained then there must be a complete rearrangement of the management structure with the introduction of modern and effective management techniques. This implies that the rigid and often ineffective procedures of the past must be abandoned. It implies also that the preparation of individuals for managerial responsibility must be of a calibre comparable to that in business and industry. Adequate preparation in management techniques is most sadly lacking in the two major professions that directly or indirectly create most of the expenditures in health care - Medicine and Nursing. Formal organization and management instruction is completely lacking in their basic educational programs.

RECOMMENDATIONS:

1. That a comprehensive approach to the health needs of the community be developed utilizing the hospitals as health care centres to form the focal points of such developments.

2. That this development take place on a regional basis.
3. That there be upgrading of administrative standards in the health services to make management in this field comparable to management in the business and industrial community
 - by improvement and updating of present degree programs in hospital and health administration;
 - by increasing the number of formal basic and continuing educational programs in health administration;
 - by devising a regional management system in which a well-trained and experienced Administrator with good consultative staff resources could be made responsible for a number of health facilities in a region;
 - by considering the team approach to Nursing, Medicine and Management by setting up a National Committee composed of experts in Nursing, Medicine, Hospital Administration and allied health fields to:
 - develop methods to improve the utilization of nursing personnel, based on carefully formulated work standards and inservice education. In part this could be accomplished by development in the inpatient care areas of the health care centre of a system of identifying the specific nursing needs of each patient, and, therefore, the staffing pattern of each nursing unit. An additional contribution would be the development of nursing

team staffing patterns on an average rather than on a maximum patient care basis with the availability of an adequate "float" or "flying squad" pool of full-time or part-time staff nurses;

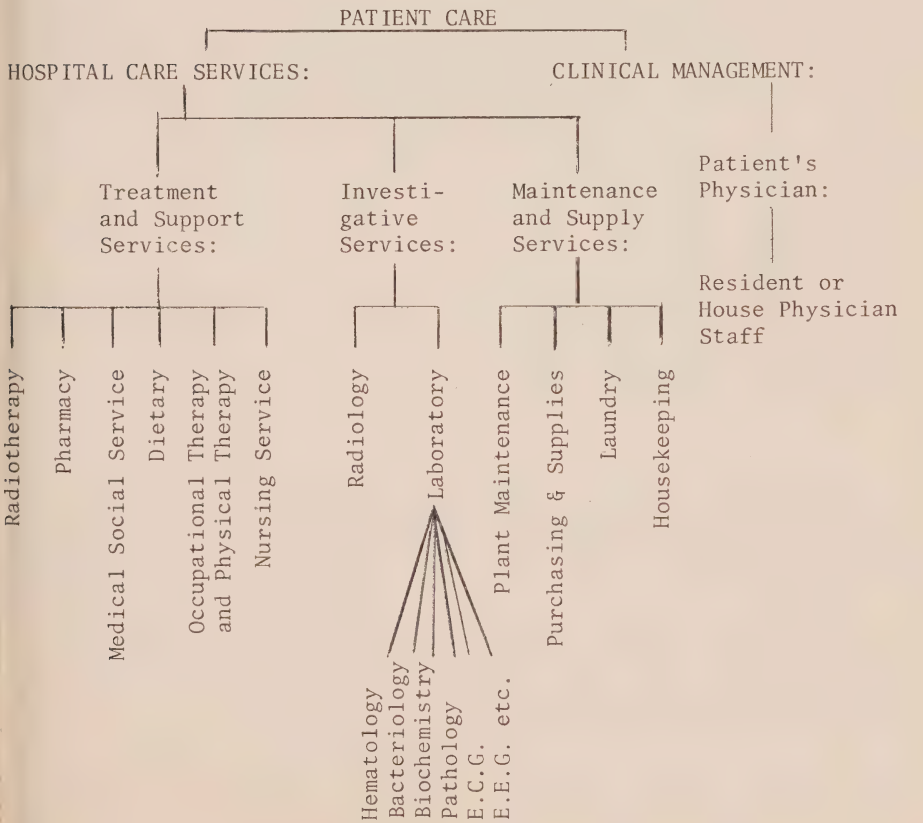
- develop methods of evaluating the quality of patient care;
 - develop criteria for measuring productivity and evaluating performance of professional and technological personnel in the health field.
4. That because good management is dependent on good information there must be a national computerized Hospital Information Centre developed to provide provincial authorities, regional boards and individual hospitals with the current comparable statistics required by management to develop and maintain good staff productivity.
 5. That the Research and Development Branch of the Department of National Health and Welfare, together with the Department of Labour, undertake an on-going program to compare productivity in hospital with that in comparable service industries.
 6. That the Research and Development Branch of the Department of National Health and Welfare develop a centralized computerized repository for reports on operational research and work function studies in hospitals, that all hospitals be required to provide this centre with copies of such reports, and that information concerning the findings be made available on request to all Canadian hospitals.
 7. That a National Committee, composed of experts in Nursing, Medicine, Hospital Administration and

allied health fields, be established to develop a continuing Operational Research Program to maintain progress in health care organizational and management techniques.

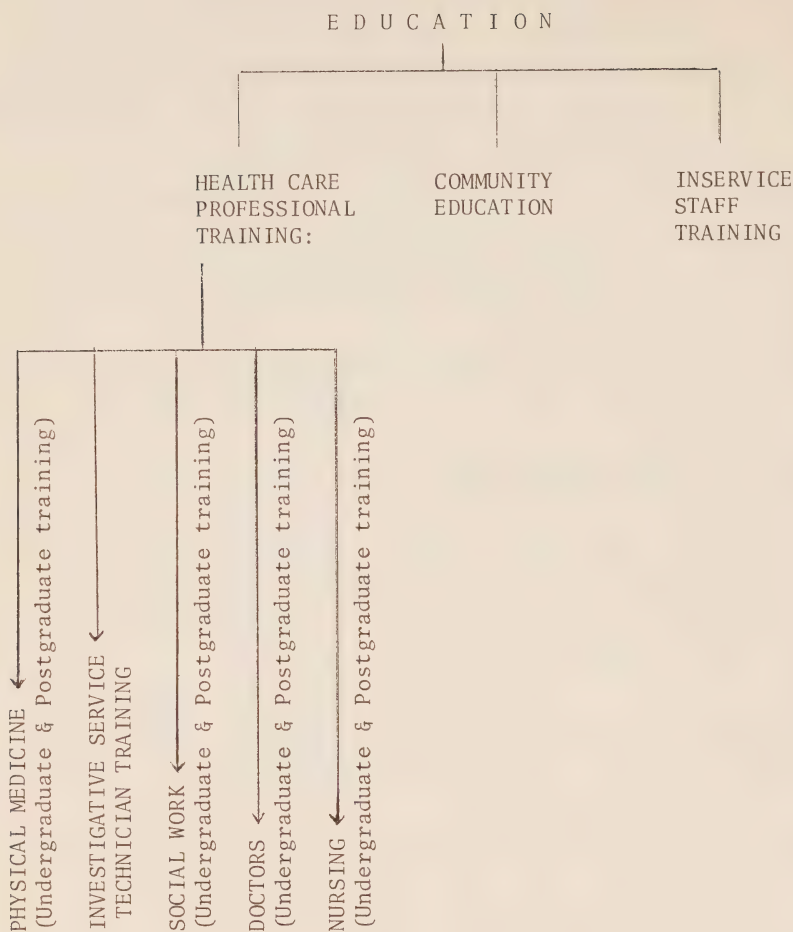
From a cost accounting viewpoint each of the three traditional areas of a hospital's function - patient care, research, and education - should be identified and separated one from the other in the accounting procedure. Each of these functions should then be subdivided into their component parts for further accounting identification.

Tentatively and perhaps incompletely the results of such an analysis are shown in the following charts:

I. P A T I E N T C A R E



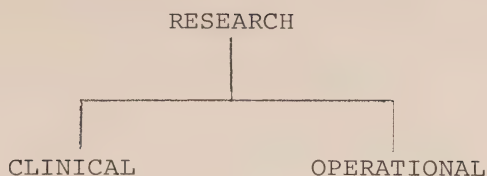
II. E D U C A T I O N



In order to carry out in the hospital the health care professional training both the physical facilities of the hospital and the time of its staff are utilized.

Inservice staff training includes orientation of new employees. The costs of such inservice training should also be identified.

III. R E S E A R C H



An important objective of operational research should be to establish the average costs of education indicated on the foregoing section. In addition, operational research should lead to the greater application of industrial engineering techniques; the use of more shared services with other hospitals; better corporate planning and stronger overall administration. All of these factors should produce a more effective and efficient and consequently less costly operation.

Dr. A. MacDonell

6. CAN OTTAWA BREAK THE LOG JAM?

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The news that Federal Health Minister John Munro has appointed a joint Federal-Provincial Committee to stimulate research into various aspects of the delivery of health care should be welcomed in every quarter. Task forces have been appointed to examine such matters as 1 ". . . wages and salaries, utilization of hospital personnel, the use of beds and facilities and the operational efficiency of health facilities".

The Minister of National Health and Welfare is to be congratulated. For too long we have been without meaningful research in these areas. Instead of commissioning research projects which would produce new information for hospitals to use in combatting costs, governments have doggedly persisted in the belief they can rely on detailed budget reviews to do the job.

Budgetary Control

Among the medium-sized and larger hospitals where the major portion of total expenditures occur, the process of budget review, appeals and year-end settlement has become to some extent a time consuming and sometimes irritating game. The rules are subject to change, and often the changes are introduced too late for hospitals or the Plans to effectively backtrack on commitments that have been made.

No one is likely to suggest the elimination of budgets or the review process, but far too much emphasis has been placed upon these techniques as the means for discharging the "partnership" responsibilities that are

supposed to exist between government sponsored hospital care plans and hospitals.

The government care plans should be undertaking or commissioning research into every conceivable aspect of hospital management which has a prospect for pay-back. They should give hospitals the findings. They should encourage hospitals to make use of this information, look for evidence of it being applied, and express clear dissatisfaction when and if their hospital partners fail to respond.

Governments may not be in a position to undertake all avenues of hospital research independently because they are subject to bias, or at least to the charge of being biased, in certain areas. Nevertheless, there is much they could do which would be welcomed.

Hospital Care Plan Consultants

Surely inter-disciplinary research into the application of management techniques should play a prominent part in the activities of consultants on the staff of the hospital care plans. The roles now discharged by these consultants are important, but possibly there is room for some trade-offs to best capitalize on their time. We suggest that except for inspection functions (a perfectly valid role) and for the provision of technical advisory services to some of our smaller hospitals (an equally valid role) the time of these consultants should be primarily devoted to applied research. This should be regarded as being basic to their program, even at the expense of curtailing individual services to the larger hospitals.

Applied inter-disciplinary research of hospital management problems is badly needed as a counterbalance to the budgetary process. To carry out such research would demand careful structuring of teams to attack particular problems. Success could hardly be anticipated

without the added skills of industrial engineers, systems analysts, methods analysts, mathematicians and economists skilled in cost-benefit analysis. The purpose of such teams would be to apply collective skills to the more common operational problems found in hospitals and from this evolve methodologies and performance standards which the practicing administrator could put to use.

If the care plans concerned themselves more with placing such information in the hands of trustees and administrators and less with whether last year's expenditures justify this year's, more progress could be made in controlling costs at the proper levels of decision making, namely administrators and trustees.

The Search for Alternatives

To date there has been very little evidence that governments have effectively contributed to the control of hospital costs. They have left it up to the hospitals and perhaps they are to be congratulated, but we do not happen to think so.

Hospitals are not in a position to judge what the priorities of demand on the public purse should be, nor do they have the time or money to properly research all of the problems that beset them. Had governments acted in a more positive manner over the past ten years, they might have developed controls over cost factors outside the areas of hospital responsibility and provided motivation rather than restraint in relation to internal hospital operations.

How could these things have been achieved? First, our governments could have held firm on limiting bed numbers while concentrating upon alternatives in the system of health care in order to ensure cost effectiveness. For political or whatever reasons, perhaps the "state of the art", this course has not been followed. Fortunately we have an expanding population. It holds

out the promise for the future that we can grow into a need for the bed numbers of the types we have produced, while we backtrack and develop the alternatives to in-patient care.

In other areas, and I think specifically of the regional planning of health services, as an outstanding example, there is a legitimate need for governments to enunciate policies and make them stick. If hospitals could only feel that such policies (those that exist) are based upon careful research and if they were explained in these terms, they would be far more acceptable. Too many policy pronouncements are the obvious result of firefighting efforts or subjective philosophical rationalizations, and too many come forth after the eleventh hour for a research-based effort to be credible.

Second, our legislators could have taken public responsibility for stating in advance of salary negotiations and budget preparations the limits of provincial funds to be devoted to hospital care. Perhaps there are no limits. If this is so, then our concern can be confined to matters of efficiency related to hospital spending. If it is not so, and there are limits to available funds, then why not define them? In fairness, it must be stated that some provinces have done this. In most cases, however, hospitals have not been permitted to apply the funds allocated to them to the areas of their operations where they consider the need to be greatest. This must hinder the effectiveness of some programs and at the same time serve as an incentive to spend up to previous budget levels in others. Too fine a rein, particularly with respect to salary and wage administration, could lead to embarrassing positions for governments, but perhaps mutually agreed program controls rather than rigidly applied budgetary controls could give administrators more freedom to match program needs to spending when they are faced with clear limitations on available funds.

A third approach that would at least have contributed to cost control, could have been to give hospital properly researched facts derived from inter-disciplinary study of hospital management problems, as we have already suggested. Productivity standards rooted in work measurement and cost-effectiveness analyses of equipment items and plant layout could give trustees and administrators concrete information to use in making their decisions.

This approach would give hospitals something to go on, and help to motivate practitioners to intensify their own management efforts. Something more closely approaching a real partnership effort could be created, with government undertaking commissioning, or financially supporting meaningful research into problems commonly encountered in hospital management, giving hospitals the results and then leaving them free to do their own thing.

If some hospitals failed to act when a clear and specific action could be taken, governments would have no difficulty finding support among hospital peers for bringing pressure to bear for changes at the top, or for applying financial restrictions to their operations. This, however, is looking at the partnership in its most negative aspects.

Few hospitals are prepared to ignore good advice. It is the formless non-specific recommendations based on averages and last year's conditions which they resist. It is the demand for change in planned spending when there is no hope of meeting the demand that leaves them bewildered.

If hospitals could see that governments really are interested in effecting economics and that they are prepared to help them achieve economics through cooperative support efforts, there is no reason to think that hospitals would not respond.

Research

In a recent report of the Medical Research Council of Canada², the following words appear:

"It may further be commented that no major industry in a developed country operates in the way in which the Government of Canada and the provinces run their health industries. All industrial companies devote a substantial proportion of their profits to developmental and operational research. Until recently, the money for this type of research had to come out of industrial earnings. More recently, in a very significant policy decision, the Government of Canada made available to industry sums of money to stimulate the establishment of research. Particular attention is directed to this analogy with industry because the delivery of health services is indeed an industry. Health services are one of the major employers of labor in this country and one of the biggest spenders on supplies and consumable material. These services should be conducted as efficiently as a major industrial concern or public utility."

The paragraph quoted is from a portion of the M.R.C. report which deals with the need for government supported computer centres to research the delivery of health care services. Certainly there is need for this type of sophisticated computer oriented research, but how long will it be before it pays off? The more pragmatic approach of applied research aimed at providing answers to current operating problems could show benefits almost immediately.

The indictment in the first sentence of the excerpt from the Medical Research Council's report in many ways seems deserved. Our governments assumed major responsibility for financing hospital services more than ten years ago. Their research efforts at the level where

it would pay off on a day-to-day basis have been almost non-existent in relation to need, and the plea of the Medical Research Council for resources for sophisticated research into the delivery of health care speaks for itself.

Let us give two important examples of needed research. First, management by objectives as a results oriented approach towards achieving efficiency has been widely accepted by industry. The concept springs from some of the most advanced management thinkers in the world. What stimulus has come from our governments to research, on a scientific basis, the application of this theory in the hospital setting? A few hospitals have been encouraged to experiment with the concept, but this can hardly be classified as a serious research effort.

Second, we know that some success has been encountered in Pensacola and elsewhere with varying forms of employee group incentives. Here again there is a need for controlled experimentation and scientific evaluation. It is now an open secret that a little of this is going on in Ontario, but it is doubtful that it is on a scale which will permit meaningful conclusions to be drawn. The subject is so important it warrants a carefully structured approach based on recognized research principles. Without government support it is hard to see this approach being taken.

Summary

Neither hospitals nor governments can afford to be without research, both theoretical and applied. It must range from complex mathematical modelling of alternative health care delivery systems to pragmatic studies of such things as idle time spent by staff on nursing units. Neither hospital nor governments can afford to leave such research entirely to the other fellow, for while they can become partners of sorts, in the end

it must be remembered that governments are primarily responsible for public funds while hospitals are primarily responsible for patients.

We know there is no single answer to controlling costs and nothing in this article is suggested as a panacea. Surely however we can recognize the difference between limiting expenditures and controlling costs. Budget reviews can help to limit expenditures and this is very important, but we would like to suggest that the management route is the important one if controlling costs through increased efficiency is desired. Stronger initiatives in promoting applied research and conducting such research should be expected of our governments. We now have an action-oriented Minister of National Health and Welfare. Let's all give him our support.

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7. TEAM APPROACH TO PATIENT ASSESSMENT

In considering some of the problems of hospital operation it becomes apparent that we are examining the function of a health care facility. In order that the function of that health care facility - the hospital - be clearly defined there must be a clear understanding and appreciation of the needs of the community for health care. There is a tendency to consider peripheral problems such as staffing patterns, identification of job description, when examining the operation of hospitals.

In reality the central element is the individual whom we call the patient. His health care needs in the broadest sense require categorization and analysis. Only after this has been accomplished can there be effective planning measures to support those needs. These measures will include a variety of services and a variety of facilities, hopefully, integrated into a comprehensive health care centre. Obviously effective regional planning is basic.

The role of the hospital in such a health care centre is fundamentally to provide a therapeutic facility in which by active medical and surgical treatment, active disease is arrested, alleviated or cured. At the present time many of our problems and difficulties derive from the fact that the hospital bed, although designed for the indicated therapeutic service is not being used solely or even predominantly for this purpose. It is being used for investigation, it is being used for long term or extended treatment care, it is being used as an expensive answer to social problems. Until the use of the hospital bed can be restricted largely to the purpose for which it was designed, problems of mounting costs will continue.

In the discussion which follows it is assumed that provision must be made for accurate assessment of the health needs of the individuals who are to utilize hospital facilities. We must be sure that these individuals do in fact require care in the therapeutic environment provided by the hospital. Such assessment involves adequate multiphasic screening.

A) Team Approach:

The team approach towards patient care can be compared to a football team. The team cannot function without a quarterback and the nurse like the quarterback calls the play in patient care. The team cannot function without a coach. This is like the Doctor who outlines the overall strategy. It cannot function without a General Manager and this is like the hospital administrator who sees to it that facilities, equipment, etc. for the team are available. They cannot function without the Board of Directors.

The Charge Nurse who can be likened to the quarterback does a pretty fair job of calling the plays on the immediate situation as far as the patient is concerned. She has a pretty good idea of how the other members of the team operate and how they function and she has a real good grasp of her field of play, namely the hospital facilities in which she carries out her function.

The Doctor is accustomed to dealing with individual patients as an individual. Consequently, although he should be the coach of the team he is often ineffective in this role, in that he has insufficient grasp of what his player resources are and what his facility resources are. As a result he often expects and demands too much of his quarterback to the extent that he may leave orders for his nursing staff to carry

out which are beyond her sphere of activity (e.g. discharge the patient). He is also not sufficiently aware of the facilities and what they are to do. Physicians and the community at large tend to use hospitals to solve problems that are not primarily therapeutic problems. Certainly, they may be problems related to the individual's health and welfare but frequently they are not the type of clinical situation that requires the support of a hospital bed.

It is to be remembered that a football team does not play soccer, nor does it play baseball, nor does it play cricket. But this is what we are expecting of hospitals. Instead of playing the therapeutic game only we are expecting them to be competent and playing other games as well.

Hospitals have become complicated and sophisticated in their operation but the only people who do not get an orientation course are the people who need it most - The Doctor. The function of the hospital has not been clearly defined for him. The hospital bed is the answer to all his problems - diagnostically, socially, and last of all therapeutically. Once a patient is in the "golden bed" his problems relative to that patient are minimized.

Dr. J.A.K. MacDonell.

8. PRODUCTIVITY STANDARDS FOR PATIENTS' NEEDS

If a unit of work is considered to be an expression of the task to be performed and the time taken to perform it, then it becomes apparent that a more precise definition of units of work for each department in the hospital is urgently required.

Once units of work have been so defined then realistic approaches to the utilization of personnel and the establishment of staffing standards can be made. Several studies related to the utilization of personnel and staffing standards have been reported in the literature but these have been based on hospitals in the United States.

Very little work on this problem has been done on a Canada wide basis. Application of such standards in the Canadian system of hospitals has promise of effecting greater efficiency of operation and better cost control.

The Department of Nursing Service accounts for almost 50% of the personnel budget, which in turn comprises 70% of the hospital operating costs. Thus, an examination of what nurses are doing, where they are doing it, when they are doing it, why they are doing it, and how they are doing it is of major importance.

By this analysis a description of the tasks which nurses are expected to perform should emerge and may indeed answer that important question - What is nursing?

Factors in Nursing Work:

Obviously, there are many facets of a nurse's work to be examined. However, two of the factors involved are easily scrutinized with informative results.

A. First of all, it is not so much the number of patients to which a nurse must provide care. Rather it is the type of patient relative to his needs which determines the nursing care and the nursing time he receives. A rapid and easily applied method of categorizing hospital patients according to the care (Index of Care^{1,2.}) they receive is available. Application of this method results in the identification of the following categories of hospital patients:

<u>Level of Care:</u>	<u>Care Category:</u>	<u>Nursing Care Requirements:</u>
Level I	Investigative Convalescent	Minimal amount of nursing care.
Level II	Intermediate Extended (Long term)	Moderate amount of nursing care.
Level III	Acute Intensive	Maximal amount of nursing care.

The Level of Care categorization repeated at intervals in a hospital provides an overall average of the type of patient the hospital is serving. Conceivably peak seasonal loads (type) might be predicted. Once the hospital average of Levels of Care has thus been established, two major applications are possible:

1. As a check that the objectives of the hospital operation are being followed.
2. In conjunction with the "Timing Studies of Nursing Care in Relation to Categories of Hospital Patients"² the amount of nursing work (direct and indirect) being given in the hospital can be indicated.

B. The timing studies of nursing work conducted on the basis of a Level of Care categorization of hospital patients indicate the following:

1. The Level of Care correlates with the amount of care (in terms of time) a patient receives. Thus, the Levels represent identifiable gradations of care time.
2. Care times which characterize each level in a particular hospital are peculiar to that hospital alone. Thus, these timing studies must be conducted in each hospital in order to establish the numerical correlation between Level and Time.
3. Once each hospital has established this numerical correlation between Level and Time then numbers of staff required can be estimated. This, as has been indicated, is applicable on an annual or semi-annual basis to establish overall hospital requirements for nursing staff. In addition, however, there is also a daily application at the ward levels as follows:

Ward work load in providing patient care is subject to considerable daily variation. If this variation can be identified on a daily basis then numbers of staff can be varied in order to meet the requirements. Levels of Care "runs" on a daily basis on each ward identify the swings or variations in work loads relative to the provision of patient care. From the timing studies, if the ward population of each Level is known then the numbers of nursing staff required to provide care can be estimated. Arranging ward staffing on a "Core" staff

basis with "float" or "flying squad" reserves or reinforcements makes available the flexibility necessary to meet the changing day to day demands.

The timing studies only examine and analyze the nursing time spent relative to the provision of patient care for each Level. This nursing time consists of a direct component (activity relating to a nursing procedure in physical contact with the patient) and an indirect component (activity relating to a nursing procedure but carried out away from the patient). If direct nursing care is considered to be the product of the work of nurses and the work cost is represented by the indirect nursing care, then the ratio of the direct nursing care time to the indirect nursing care time is an indication of the efficiency of nursing work.

$$\text{Efficiency} = \frac{\text{Direct nursing care time}}{\text{Indirect nursing care time}}$$

Of continuing concern to each hospital should be this question of efficiency of nursing work. It is evident that this efficiency can be increased by decreasing the indirect nursing care time. Consequently, an analysis of factors which decrease indirect cost time is urgently required as, for example: of ward design in which transit distance between the location of supplies and equipment and the patient care area are minimal; of ward work methods with particular reference to reducing the often cumbersome and repetitive methods of recording nursing information; of many of the non-nursing functions of drug preparation; and of the method of supply requisitioning, delivery and disposal systems to and from the nursing units.

RECOMMENDATIONS:

1. That productivity standards for each department in hospitals be formulated. Application of such standards in the Canadian system of hospitals has promise of effecting greater efficiency of operation and better cost control.
2. That a comparative inventory of nursing work be conducted. This means that the duties of nurses and the work they should be expected to do would be carefully listed and compared with a similar list of what they actually are doing. A standard of what nursing duties and work are could then be established and a realistic unit of nursing work could be evolved. In this way non-nursing duties should be eliminated on a sound basis of fact. In order to implement this recommendation it is suggested that the Secretariat have attached to it industrial engineers who could advise the hospitals regarding the framework upon which their examinations should be conducted. The Secretariat should be prepared to actually supply personnel to assist in accumulating this information so that a standard format would be established across Canada.
3. That a correlation be established between the grade of nursing staff capable of performing nursing tasks and the level of care of the patient. This evaluation should involve considerations of the minimum amount of education/training required to perform each job safely and effectively.
4. That "Levels of Care" and "Timing Studies" be carried out on a project basis with a national statistical sample of hospitals. It is expected that such a project would yield a mass of data in

which national and /or provincial norms could be identified, and from which standards could be derived for nursing service.

5. That discussions with the Dominion Bureau of Statistics be undertaken to include a Level of Care categorization of patients with their "Annual Return of Hospitals". The valuable dimension of the type of hospital patient served would thus be added to their statistics. Thus, correlation between the Levels of Care of patient and the units or amount of work in the various hospital departments could be obtained.
6. That the "Level of Care" categorization repeated at intervals in hospitals would provide an overall average of the type of patient a hospital is serving.
7. That utilizing the "Level of Care" categorization on a daily ward basis would identify the variations in work loads on wards relative to the provision of patient care. Utilizing this system ward staffing would be done on a "core" staff basis with "float" or "flying squad" reserves which would make available the flexibility necessary to meet the changing day to day demands.
8. That the function of hospitals in the health service field be reviewed and policies be established for the exercise of that function. Even at present more effective pre-admission and admission screening and assessment of patients could result in streaming them to areas appropriate to their care needs. Thus, indiscriminate random admissions to "general ward areas" could be minimized.

J.A.K. MacDonell, M.D.

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9. MULTI-HOSPITAL MANAGEMENT ENGINEERING PROGRAMMES

a Report prepared by

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Part I - Introduction

A general discussion on the role of management engineering in hospitals and how the total health care system can obtain a greater return through a cooperative Multi-Hospital Management Engineering Programme.

Part II - Philosophy and Objectives

The terms of reference for a cooperative programme.

Part III - Alternatives

An outline and brief discussion on the various alternatives available and a choice of the most feasible alternative.

Part IV - Recommendations

A detailed analysis of the most feasible and attractive alternative considered in Part III under the following headings:

- (i) Organization
- (ii) Control and Communications
- (iii) Services Rendered
- (iv) Finance

- (v) Staffing
- (vi) Possible Problems
- (vii) Advantages

Part I - Introduction

Industrial Engineering has been defined as the discipline "concerned with the design, improvement, and installation of integrated systems of men, materials and equipment. It draws upon specialized knowledge and skill in the mathematical, physical and social sciences together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the results to be obtained from such systems".

This definition is probably as good as any to apply to the term management engineering. Specifically management engineering includes the functions of Industrial Engineers, methods analysts, systems analysts (computer and other), operations research analysts, etc. In general then, management engineers are concerned with the optimum utilization of resources.

The twentieth century has been a period during which hospitals have been called upon to provide an ever increasing number of services to patients, education for physicians, nurses and other members of the health team and facilities for medical research.

This dramatic increase in the quantity and quality of medical and hospital services has resulted in a tremendous increase in resource requirements which is naturally reflected in the spiralling costs of providing health care. Therefore, to maintain high quality hospital services at a reasonable cost level, the concentration must fall upon efficient integration and maximum utilization of the resources available which can be realized only through the application of the best management practises in hospitals.

Administrators must be prepared to adopt and apply scientific management principles if they do not wish to abdicate their authority and relinquish their functions to greater external control.

As previously mentioned, the management engineer is concerned with the optimum utilization of resources and if his services are utilized properly he can be of immeasurable assistance to the administrator in providing high quality services at a reasonable cost level.

The question now becomes, how can administrators make maximum utilization of the management engineering function? How do smaller institutions who cannot support a full time staff member avail themselves of services? Do larger institutions that can support such a function hire specialists for each facet of management engineering i.e. Industrial Engineering, operations research, systems (computer and other)?

How do hospitals minimize the relatively high cost of management engineering personnel and at the same time obtain maximum benefits? How do hospitals avoid duplicated effort in light of the fact that operations are basically the same from hospital to hospital? How can hospitals minimize consulting costs? How can hospitals make use of a consulting service that is knowledgeable of hospital operations?

One approach has been for hospitals to hire staff management engineers. This provides a particular service for the hospital but does not satisfy many of the above considerations in that smaller hospitals do not have funds available for an in house person, the hospital hiring management engineers may have to hire many highly paid specialists and there will be much duplicated effort.

If this is not the answer what is?

A relatively recent development in the health care field especially in the United States has been the

joining together of hospitals to share the talents of management engineers and this has resulted in the formation of many formal cooperative multi-hospital management engineering programmes.

The main purpose of this report is to present recommendations concerning the formation and operation of such a programme in Canada.

Part II - Philosophy and Objectives

Following is a proposed definition of the philosophy and objectives of a Cooperative, Multi-Hospital Management Engineering Programme.

Philosophy

A management engineering programme must provide all member hospitals and health care institutions regardless of type and size access to the best possible quality of comprehensive management engineering services with a minimum duplication of effort and at minimum overall costs.

Objectives

1. To make competent management engineering talent economically available to all member hospitals regardless of size consistent with the highest quality of technical service.
2. To identify common needs among participating hospitals, to analyze, design and implement systems and procedures which are applicable to participating hospitals in general rather than to any one specific hospital.
3. To develop evaluation methodologies than can be utilized by hospital management to monitor and control hospital operations.
4. To impart knowledge of management engineering techniques through the development of study guides and/or by in house seminars so that hospital personnel can analyze and improve their own operations.

5. To conduct specific studies for individual member hospitals on a special contract basis.
6. To create a management engineering team that is cognizant of and experienced in hospital operations and that can consider the trends and issues relating to the "total health care system".
7. To disseminate technical reports and other information between member hospitals participating in a programme and between programmes.
8. To avoid a duplication of effort and thereby minimize the relatively high cost of management engineering personnel.
9. To coordinate with management engineering departments in universities for the purpose of stimulating interest in the development of research studies on hospital operations.
10. To seek financial aid for the purpose of conducting research studies into hospital operations.

Part III - Alternatives

Following is a list of alternate courses of action that can be adopted in establishing a coordinated programme of management engineering.

1. Coordination and information exchange through informal organizations such as the Hospital Management Engineering Association.
2. The same as 1 except that the Association would have a permanent chairman and secretary.
3. A formalized cooperative multi-hospital management engineering programme with a centrally established management engineering team under the direct or indirect control of the administrators of hospitals participating in the programme.

Alternatives 1 & 2 do not satisfy the requirements of the smaller outlying hospitals that do not have

the necessary resources to support a management engineering function. In addition, both alternatives do not involve sufficient authority, responsibility and resources to develop a truly cooperative programme concentrating on the total health care system rather than on individual hospital problems.

Alternative 3 seems to be the only alternative that can possibly satisfy the philosophy and objectives of a Cooperative, Multi-Hospital Management Engineering Programme.

Therefore 3 is the only alternative considered and developed in Part IV of this report.

Part IV - Recommendations

(1) Organization

Regions based on an already defined division (i.e. O.H.A. districts) or on a yet to be defined division would be established within each province.

The administrators of participating hospitals within each region would elect or appoint a regional board of directors from their particular group to direct the activities of the management engineering team.

The Manager of Management Engineering Services would report to this Board of Directors. The manager would in turn be responsible for the technical and personnel aspects of operations of the management engineering team.

Depending on the size of the team, he could have supervisors of the subspecialties reporting to him i.e. Supervisor of Industrial Engineering.

It should be stressed that I do not envision each region having a large multi-disciplined management engineering staff. It is quite possible that many of less populous regions would have very few team members

(i.e. 2-4) and they may concentrate solely on Industrial Engineering while some regions like the Toronto area might have a large staff (i.e. 20-30) with diversification into all areas of management engineering.

It is quite possible that the regions having larger diversified staffs could render services to other regions not having direct access to these services.

The larger hospitals could still maintain one or two management engineers to work on more short term immediate hospital problems - this would depend on the particular hospitals' requirements and resources. These staff members would be expected to draw on the central group for technical assistance.

The regional Board of Directors within each province could then elect or appoint a group of administrators to sit on a Federal Board to coordinate the efforts across the country.

Another alternative to the above organization might be the establishment of a Corporation to manage the Management Engineering Services. This would probably involve less direct participation by hospital administration which I think would be a great disadvantage at least in the initial stages of operation.

(2) Control and Communications

The regional Board of Directors would be responsible for the overall direction of the Management Engineering Program. In conjunction with the Manager of Management Engineering Service they would establish basic hospital needs and the priority of projects.

The manager of the team would be responsible for the overall functioning of the team and the meeting of objectives as defined by the Board of Directors.

The Board of Directors for each region could appoint individual members to sit on a provincial Board to coordinate provincial efforts. This could be taken one step further to establish a Federal Board to coordinate efforts across the country. Even if it proved difficult to coordinate development on the federal level, such an arrangement would at least facilitate the communication of ideas, projects, etc. between the various groups.

I feel that it is imperative, especially in the initial stages of development that hospital administrators sit on the Board of Directors and that they actively participate in defining the overall programme. This is the only way that hospital administrators will develop a genuine interest in and commitment to the programme - the programme will be a success only to the degree that hospital administrators can make effective use of Management Engineering personnel.

(3) Services Rendered

The services to be provided by the proposed Management Engineering Services Programme can be generally categorized as follows:

- (a) Group Methodologies
- (b) Multi-Hospital Studies
- (c) Individual Hospital Studies
- (d) Training and Education

(a) Group Methodologies

The group methodology approach involves the identification of a common need among participating hospitals and the employment of a common analytical approach in all participating hospitals to fulfill the need.

The central facility would develop a documented analytical approach that could be applied by hospital personnel to continually monitor and control hospital operations (i.e. staffing levels).

If this evaluation indicates the need for concentrated follow-up, the hospital could request an individual hospital study.

(b) Multi-Hospital Studies

The Board of Directors would establish priority projects in terms of common pressing needs among participating hospitals. Where possible, the projects would be carried out in such a manner that the long range requirements of all participating hospitals would be considered so that recommendations could be developed and implemented in many hospitals rather than in any one particular hospital.

Studies relating to the centralization of facilities such as laboratories, laundry, dietary etc could be carried out.

The emphasis would be on the long range requirements of the total health care system rather than individual hospitals. All participating hospitals would have an open door policy to the project engineers from the central facility.

(c) Individual Hospital Studies

This mode of operations would satisfy individual hospital requirements for a specific in hospital study. A project engineer would be assigned to one or a group of hospitals on a contractual basis. The recommendations made would be specifically related to the individual or particular group of hospitals rather than being wholly applicable to all participating hospitals.

This service would be particularly attractive to the smaller hospitals that cannot afford a permanent management engineer. The larger hospitals with a permanent staff member would probably not require this service.

(d) Training and Education

One of the objectives of the coordinated programme is that the centrally shared service should impart its knowledge of management engineering techniques to participating hospital personnel so that they can become effective problem solvers and perform their own studies.

For any type of management engineering programme to be effective, hospital personnel must understand its function. The centrally shared service could conduct seminars and workshops to train hospital personnel in the techniques of management engineering and to disseminate the results of research work done on hospital operations.

(4) Finance

The cost of the centrally shared services would be borne by the participating hospitals on a non profit basis. Hospitals could be charged according to bed size, the justification being the assumption that the extent of benefit derived by a hospital is proportional to bed size.

Fees for participation can be based on a continuous hospital participation in the activities of the overall programme whereby the participating hospitals would agree to the majority decision on the priority of studies. The participating hospitals would pay a set annual fee for membership in the centrally shared service.

An alternative approach might be where hospitals can choose at what point in time they want to participate and pay a fee based only on their total participation time.

For example, one or a group of hospitals might feel that the first few projects to be developed and implemented are really of very little interest to them but that they would like the option of becoming involved in various studies thereafter. Therefore, they would

not pay a continuous fee but a fee based on involvement in specific studies.

Hospitals requesting specific studies that would require an engineer in residence for a period of time would pay a fee on a contractual basis.

A minimum and maximum limit to fees should be established. A minimum fee must be paid by all participating hospitals to cover such things as the training and education activities because they will be directed toward and received by the total membership rather than just a segment. The centrally shared service might cover some of its costs through financial grants-in-aid (especially start up and development).

(5) Staffing

The staff levels in the centrally shared facilities will vary from region to region depending on the number of participating hospitals and the scope of the proposed programme. One region may have a full compliment of management engineering personnel, Industrial Engineers, operations research analysts, computer systems analysts, while another region may have only Industrial Engineers.

An attempt should be made to staff the central agency with personnel knowledgeable and experienced in hospital operations i.e. management engineers presently employed in hospitals.

The key criterion would probably be that the team members must display technical competence in terms of their formal training and their practical experience. These individuals should also be human relations oriented in that they will be dealing with many non quantifiable concepts such as patient care which will require close qualitative analysis - they cannot be strictly thing or production line oriented and expect to contribute to the improvement of hospital operations.

To attract and keep the right people in terms of qualifications and experience, salaries competitive with industry in general must be offered.

(6) Possible Problems

The maintenance, updating and communicating of data and information between all regional groups within a province and between provinces may prove to be a problem especially under the pressure of increased workloads. However, without adequate updating, "out of date" studies may be applied without proper validation or modification leading to inaccurate results. Without adequate data maintenance continuous redevelopment of basic information will be required thereby hampering programme growth. Communications is the basis of a centrally shared facility - without it the basic objectives of a cooperative programme cannot be met.

If hospital administrators do not offer their full and active support to the programme successful implementation of studies will not be possible and the programme will be of no use. The active participation of hospital administrators is a key requirement.

In establishing the priority of projects, various hospital administrators may feel that the particular requirements of their hospitals will not be satisfied quickly enough. However, everyone must keep in mind that the emphasis is on the requirements of the total health care system not on any particular hospital.

The scarcity of good management engineering personnel may prove to be a problem in that the demand greatly exceeds the supply. This type of situation leads to a problem in separating truly competent individuals from the imposters who know the jargon but not how to apply it.

The success of the programme is also very dependent on the ability of the management engineers to

communicate with all levels of hospital personnel. This problem is magnified by the fact that the management engineers will not be able to deal with hospital personnel as fellow employees which may tend to create an air of suspicion and mistrust. The management engineer must be adept in handling human relations problems.

(7) Advantages

The advantages associated with a Cooperative Multi-Hospital Management Engineering Programme are many and the following summarizes but a few:

- (a) Provide competent management engineering talent to hospitals regardless of type or size.
- (b) An organization physically separated from any particular hospital but accepted within the hospital community can be more objective in its dealings with hospitals.
- (c) A coordinated approach allows for the identification of issues and trends affecting all hospital operations and is conducive to better long range planning in terms of the total health care system.
- (d) There would be increased emphasis on the total system rather than on subsystems.
- (e) The most pressing hospital problems would be isolated and a priority of projects established providing a well defined path for improvement of hospital operations.
- (f) Expensive duplication of effort would be avoided.
- (g) Stimulate the active participation of hospital personnel in problem solving using management engineering techniques.

10. PERSONNEL ADMINISTRATION ON A REGIONAL BASIS

Although personnel costs represent approximately 70% of the total operating expenditures of hospitals, the need for trained Personnel Directors has only been recognized by hospitals in the last few years.

Hospitals lag far behind industry in the development of separate full-service personnel departments under the direction of qualified experienced Personnel Directors. This is all the more difficult to comprehend when it is realized that the percentage of labour cost to total expenditure in hospitals is double that of the average production industry.

Before we condemn hospital administrators for complete lack of foresight, there is some defence in the historical evolution of hospitals.

The discovery of anaesthesia and antisepsis techniques in the nineteenth century transformed hospitals from religious and charitable asylums for the dying poor to workshops for physicians in private practice.

In the religious asylum years, hospital workers were expected to have a sense of dedication that was considered in effect a substitute for cash. Wages were far below those paid for comparable services in the industrial economy. Hospitals provided accommodation, meals, other benefits and a paternal benevolent attitude to their employees in lieu of adequate salaries. As hospitals have emerged over the years from religious asylums to community enterprises and health care facilities, these outmoded personnel practices have been largely discontinued and wages have risen sharply.

Wages will continue to rise as hospitals compete with industry for manpower in a tight labour market. Today's labour unrest in hospitals is indicative that hospitals are out from under the protective umbrella of

charitable enterprise and must stand on their own in the economy.

Most hospitals have neither the financial resources nor the qualified manpower to cope with the increasing demands of labour in an inflationary economy. In addition there is a critical shortage of experienced personnel administrators. For these and other reasons, which will be dealt with later, it is imperative that each Provincial Hospital Association develop a strong labour relations department to provide advice and assistance to Regional Boards and individual hospitals.

The recommendation for the development of Labour Relations Bureaux on a provincial basis rather than by regions is made because of inherent advantages. To date, at least three provinces have already taken steps in this direction. Both Quebec and British Columbia are negotiating salaries on a provincial basis and the Ontario Personnel Relations Bureau has been established by the Ontario Hospital Association to assist hospitals in personnel administration and labour negotiations.

During the course of earlier meetings the Task Force has discussed the inefficiencies of present hospital personnel practices and outlined certain areas where Provincial Personnel Relations Bureaux could produce economics. These are summarized as follows:

(1) Salaries and Wages

Replacement of the present routine anniversary increment programme with a merit system related to attainment of objectives. The majority of hospital personnel have been receiving both a range and anniversary increase each year without any relationship to productivity.

Collective bargaining should be carried out on a provincial basis using expert personnel and labour relations consultants. At present individual hospitals

conduct bargaining, some without the assistance of legal or personnel counsel. The resulting agreements set a plateau for both salaries and fringe benefits for subsequent negotiations with other hospitals.

(2) Measurement Standards

It is apparent that a major obstacle to the development of an efficient system is the absence of specific standards by which performance can be measured. Before the effectiveness of health care can be improved and assessed, it is essential that meaningful and measurable indices be developed.

A provincial system for reporting operating data from health care institutions can produce pressure for improved management performance by making comparative data visible throughout the community. Measures of performance must always comprehend considerations of quality which can never be standardized and counted. However "quality care" has often been used to screen poor management performance which a reporting system would tend to remove.

(3) Educational Programmes

Increased support should be provided for the development of provincial educational programmes. These courses should cover all aspects of the health field including technologists, allied health personnel and programmes in management to prepare people for promotion. A person's potential would determine entrance into management courses and promotion would be based on results obtained. The academic component would be provided by colleges and institutes of applied arts and sciences with the hospitals providing the clinical facilities.

Course standards should be established and diplomas awarded which would be recognized from province to province.

(4) Fringe Benefits

The Task Force was critical of the developing pattern whereby employees accumulate large amounts of sick leave which would be paid for upon termination of employment. It was recommended that sickness indemnity plans be developed on a provincial basis which would be portable from province to province. Vacation policies and other benefits should be standardized on a provincial basis wherever possible.

(5) Productivity and Incentives

The use of incentive programmes should be supported and encouraged provincially to stimulate greater productivity in hospitals. In industry, advances in technology have usually resulted in substitutions of capital for labour. When the production assembly lines and steel rolling mills were introduced the work force in each case was diminished. In contrast the hospital work force often as not has been increased rather than diminished by new technology because the technology creates new things to do instead of just new ways to do things. Economists have assumed from these figures that the productivity of hospital workers has been diminishing over that period. The assumption is valid only if one considers that the output, commonly measured in patient days, has remained constant. This is obviously not the case since the output to-day includes diagnostic and therapeutic procedures that did not exist a few years ago.

There are promising opportunities for improved efficiency in such programmes as financial incentives designed to increase productivity of hospital employees and competitive compensation plans and employee benefits to facilitate recruitment and reduce staff turnover. The programmes should be co-ordinated on a provincial level to implement economies and prevent duplication.

(6) Job Specifications

A job classification system should be developed for all health facilities on a provincial basis. An evaluation of each hospital position should be made and the critical requirements of each job defined in relation to the education and training required to perform each job safely and efficiently. Job descriptions and specifications should be written and uniform job titles provided throughout the province. Staffing patterns should be revised on the basis of reassessments. Assignment of duties should be made to employees who are qualified to do the job at the lowest cost.

Most hospitals cannot afford a full personnel service with a trained personnel director except on a shared basis. The establishment of Labour Relations Bureaux on a provincial basis would provide hospital administrators with an effective management tool to assist in the control of 70% of their total operating expenditures. This development in conjunction with cooperative multi-hospital management engineering programmes, which is the subject of a separate paper, should contribute markedly to increased efficiency and resultant cost reduction in hospitals.

J.D. Snedden

11. WAGE AND SALARY ADMINISTRATION

1. Wage Structure within the hospital on a regional basis.

A balanced wage structure would exist where employees performing similar services receive similar rates of pay. Variations in wage rates are related to difference in skill, experience training and other similar factors. Productivity and a balanced wage structure would correlate closely.

So, many implications and problems arise when it is recognized that wage and salary rates cannot be adjusted fully to productivity in every occupation and hospitals. One hospital, at the present time, cannot obtain a well balanced wage structure. In grouping hospitals on a regional basis or, in some ways, on provincial basis, you are in better position to get a balanced wage structure:

- 1) In extending the bargaining unit which will determine the group of job classifications among which differentials will be maintained or adjusted according to systematic principle with differential rates of increase in productivity;
- 2) In managing the collective bargaining agreement by highly qualified labour consultants;
- 3) In organizing a common wage policy;
- 4) In preventing changes in occupational content within hospitals.

2. Standards used in determining wage levels.

In the hospital field, standards used in determining wages level must be known and applied everywhere on the same basis. Institutional policy quite universal regularizes, when it does not eliminate, differentials among persons doing like work in the same region or the same province with one sometimes quite major exception.

If so, concerning standards we have to aim at full uniformity on methods used. A regional or a provincial system of standardization will permit:

- 1) A better comparison between hospitals;
- 2) More valuable statistics;
- 3) A better control of quantity and quality (see booklets: "Classifications and functions of nursing personnel of hospitals" and "Guidelines for qualifications and functions hospital nursing service personnel");
- 4) Determination of more realistic "unit measures".

3. Fringe Benefits.

Fringe benefits should be paid to employees in relation with productivity and efficiency, so, they have to be a kind of reward peculiarly for employees who work on night shift and on week-end. Fringe benefits should be uniform, a same system for every employee, nurses, orderlies, etc.

A regional bargaining unit or a provincial bargaining unit would permit to standardize the fringe benefits and to exert a better control of the value of the fringe benefits.

4. Role of the government.

Actually, the role of the government in the establishment of wages is very important in the hospital field. Quebec unions for example, asked for and obtained a direct participation of representatives of government in bargaining collective agreements. In doing so, government had a control on the global disbursement and on relations between hospitals and unions.

Government can force the grouping of hospitals, the establishment of specific regions to bargain with unions, to organize other systems in relation with wages and salary such "The specifications for computer processing of hospital payroll and related statistics".

(See the document attached prepared by hospitals and government representatives), etc.

5. Conclusions.

- 1) Organization of a regional bargaining unit on a voluntary basis or obligatory basis if necessary;
- 2) Implantation of highly qualified labour consultants on a regional basis;
- 3) Uniform standards used in determining wage levels on a voluntary basis or obligatory basis, if necessary in the same region or province;
- 4) Uniformity in fringe benefits or in system of fringe benefits (Regional or provincial collective agreements);
- 5) Utilization of computer controlled or not by hospitals on a regional or provincial basis with provincial specifications written by hospitals and government;
- 6) Co-partnership between government and hospital (Provincial Association) in the establishment of wages.

P.G. Schwindt

12. FUNDAMENTALS OF MODERN SALARY ADMINISTRATION

It is obviously worthwhile to attempt to gain some motivation mileage out of the large sums involved in hospital salary costs. Experience by those involved in salary administration emphasizes the necessity of placing decision making into the hands of those responsible for getting results.

In too many instances the approach is inflexible and personnel move from minimum to maximum automatically in a specified number of years. Compensation in these circumstances cannot be a motivating tool for the individual manager responsible for the employees' activities.

The following factors are required for a sound salary administration program.

Set objectives and ensure they are management objectives not personnel objectives.

Measure objectives, evaluate performance and base increases on this review.

Review program periodically and see if it is solving pay problems of the organization.

Be sure there is internal (most important) and external equity in position compensation.

Be willing to give as well as to receive salary information from related organizations.

Canned program not generally satisfactory, must be tailored to individual situation.

Program details must be communicated to employees.

In comparing or considering compensation methods the total package must be evaluated and each of the following items looked at separately.

- base compensation
- benefits - i.e. insurance, salary continuation, etc.
- incentives - bonus
- capital - stock options

It is also important to recognize that salary increases may be categorized as follows:

- economic - cost of living - market comparison,
etc.
- promotion
- merit

The most important and difficult aspect is to provide motivation by granting merit increases on the basis of performance. It follows that the distribution of available funds for increases must be made by the responsible line operators.

In practice the recognition of merit is limited and the following is a typical example of differences where merit is used.

- Hourly Rated Employees - Probably unionized and steps are automatic to top of ranges based on time on the job. The ranges tend to become narrow or even become a flat rate.

- Salary - clerical employees - Automatic steps to a mid point (or guide line) and controlled merit from this point on.

- Management Personnel - All increases based on merit performance.

For control purposes and to determine the amount of salary increase money available, the following approach is taken by one national company. Economic increases are generally across the board (except red circle) but available merit funds are based on the relationship of the mid point of occupied positions to the actual salaries paid. This mid point or guide line is called the Salary Administration Index or S.A.I. and represents the industry average.

The S.A.I. is represented as 1000 and the amount of merit money available to a department for distribution is based normally on how close the total cost of actual occupied positions relates to the S.A.I. For example, a department whose salaries were 92% of the

S.A.I. would probably receive more than a department at 98% (expressed .980). If 3% was granted to a department, this would not mean a 3% increase to everyone but the manager must use the 3% total to reward those employees on the basis of merit. The total might be divided amongst very few and the amount for each is at the manager's discretion although there are minimum and maximum limits of 3 and 7%.

Some comments of a general nature which I believe are pertinent to a good program are as follows:

It must be flexible to permit exceptions, as for example, special consideration for a temporary market shortage of certain types of positions.

The determination of who receives increases and the amount to be given must be made by the line operator responsible for getting a job done.

In comparing positions, the scope of the job must be clearly defined.

Range increases are not always across the board. In some years certain professions are held and although they don't like it, their real comparison is external with their profession.

Some companies have an across the continent rate for professional positions in which personnel may frequently be transferred, but a geographic rate by area for clerical and other positions.

There may have to be different salary administration plans for different types of positions.

When members of different disciplines go up the scale and become managers, there should be no difference in salary for the management function based on discipline, i.e. doctors, accountants, etc.

Professional people are often more concerned with the goals of their profession than with those of the organization. They must reorient thinking or they will be held to a

position perhaps more ably filled by a technician.

Incentives are quite possible in non-profit organizations, for example, permitting a supplemental payment of up to 20% of salary for meeting certain criteria or living within available revenue (e.g. A.M.A.

With respect to production workers, separate incentive plans may be instituted after meaningful standards have been set for applicable departments.

G.E. Fetherston

Despite technological advancement and increases in wages the number of wage earners in hospitals have increased rather than decreased. In the Province of Ontario, alone, the paid hours of work per patient day increase by a minimum of .2 hours per annum.

In the period 1959 to 1967 the average hours of work per patient day have increased from 12.2 to 14.4 - the estimated annual cost of this is approximately \$62 million. As the salary and wage budget for Nursing Departments accounts for approximately 45% of the total hospital budget, this area obviously merits close scrutiny.

Causal Factors

1. Nursing Staff complements

Because of the daily fluctuations in the demand for patient care, not infrequently the size and composition of the work force is geared to meet peak conditions and needs. Furthermore, the amount of care required in the nursing unit is often determined in relation to the average daily census only; it is not based upon an assessment of the direct and indirect needs of each patient under care.

2. Staff mix

The ratio of graduate nurses to the total nursing work force appears to be appreciably higher than in the U.S.A. Contributing factors include the following:

- (i) The educational and experience requirements of the various jobs are in need of a critical re-evaluation.
- (ii) Duties are not being assigned to those with the minimum amount of education/training required to perform the function safely and efficiently.
- (iii) Poor utilization of available nursing time.

- (iv) Auxiliary personnel have been engaged to perform functions previously performed by graduate nurses without any reduction in graduate nursing staff.
- (v) High turn-over.
- (vi) Training curriculum not geared to precise needs of the various groups of trainees.
- (vii) There is no financial incentive for the career nurse to remain at the bedside. The assumption of supervisory and administrative functions, for which individuals may have no liking or talent, is the only path to greater tangible rewards.

Laboratory

Within the past decade there has been a significant introduction of automated equipment in hospital laboratories. In an eight year period in Ontario the number of units per in-patient have increased from 20.0 to 54.6 (173%). During this same period the units per hour of work have increased from 5.9 to 8.1 (37%).

Dietary and Housekeeping

There has been a trend in recent years for hospitals to contract out the work of these departments. Generally speaking, with better "know-how", better techniques and tighter administration private enterprise has been able to perform these functions without loss of quality standards - and at a profit.

Administration

Generally speaking hospitals have been slow to take advantage of automation and modern techniques.

The Secretary of Health's Advisory Committee on Hospital Effectiveness reported that less than one half the hospitals in the United States are administered by graduates with specific training for these responsibilities. It would seem that a similar observation

could probably be made of the preparation of hospital administrators in Canada.

Recommendations

1. That hospitals be encouraged to hire and/or train industrial engineers to carry out modified work studies with the objective of obtaining optimum utilization of staff.
2. That the Provinces be encouraged to place greater emphasis on planned programmes designed to increase the supply of registered nursing assistants.
3. That Provincial Authorities, Hospital Associations, Nurses and other Professional Associations and Hospitals be encouraged to make a critical re-evaluation of each hospital function with the objective of re-defining the critical requirements of each job, then that the minimum amount of education/training required to perform each job safely and efficiently be reassessed, that job specifications and job descriptions be rewritten as required, and that staffing patterns be revised on the basis of such reassessments.
4. That in the re-definition of the job content of such categories as the professional nurse it be stressed that, if certain functions are to be reassigned to less qualified persons (e.g. ward clerks), the latter would be expected to replace the former.
5. That staffing complements in hospital nursing departments be evaluated on the basis of the direct and indirect needs of the individual patients and not on the basis of average daily census alone.
6. That comparative studies be undertaken to determine the patterns of professional to total work force nursing staff ratios with the objective of determining the most efficient 'mix'.
7. That consideration be given to the creation of a super pay scale for the career bedside nurse.

8. That a study be taken of the state of formal preparation of hospital administrators in Canada, and of the need to expand educational programmes.

Salaries and Wages

It is generally conceded that, in the early 1960's the hospital business was a depressed industry, and that hospitals were drawing from the lower quarter of the labour market. However, in the last decade considerable advances have been made in hospital salary and wage levels such that in a number of areas parity has been reached with other service industries. In this situation it is suggested that further substantial pay hikes in excess of the average for industry in general will no longer be necessary or defensible.

1. Range and Anniversary Increases

It has become traditional in hospitals for the salary ranges of nonunionized personnel to be revised each year. Within the established ranges there are as many as five steps, with the result that the majority of hospital personnel receive both a range and an anniversary increase each year. As a result of this situation professional nurses, for example, have received effective salary increases of 9.1%, 9.4%, 11.4%, 15.5% and 10.2% over the past five years.

2. Union agreements

From considerations of maintenance of hospital autonomy individual hospitals are obliged to conduct union bargaining on an individual hospital basis. Occasionally such bargaining is conducted without the assistance of competent legal counsel. The resulting agreements set a plateau for both salaries and fringe benefits for all subsequent union bargaining at other hospitals.

3. Shift Differential and Incentive Pay

As a general rule personnel will not assume additional responsibility unless they are compensated for

Recommendations

1. That the 5-step increment structure be re-examined.
It is suggested that it does not take a professional nurse five years to obtain her maximum effectiveness.
2. That consideration be given to the elimination of anniversary increases altogether if the basic range is to continue to be revised each year.
3. That collective bargaining for hospitals be carried out on a regional basis and that the services of experienced labour relations counsel be made available to each regional group.
4. That if shift work is usually associated with the function of professional categories of employees, the established salary rates may be assumed to take this factor into account and no additional shift premium may be held to apply. If, on the other hand, the performance entails the assumption of additional responsibilities it is recommended that additional compensation be recognized.

A.C. Laugharne

TASK FORCE ON BEDS AND FACILITIES

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SCOPE OF THE STUDY

The terms of reference of the Task Force on Beds and Facilities are broad and general. They include the specific task of attempting to assess, and to develop formulae for determining, bed needs. Further, the Task Force was specifically charged with examining the interfaces between hospital and welfare services and the impact of alternate facilities and services on each other, and considering a total systems approach as well as alternatives to the present patterns of organization and practice.

It became evident that the Task Force could not restrict its consideration to facilities operating under the present terms of the various hospital plans, nor could it limit its consideration to hospital facilities, nor even to the facilities operated under the general direction of Departments of Health.

The Task Force recognized that there were significant relationships between hospital and welfare services, particularly as the welfare services related to the housing of disabled, aged, or domiciliary-type patients and to rehabilitation, the vocational aspects of which come within the purview of the Welfare Department in at least some jurisdictions.

In short, the "total system" with which it was dealing includes facilities operated under hospital plans, under Mental Health Branches of Provincial Governments, and under Welfare Departments of Provincial Governments. Much of the earlier discussion by the Task Force tended to underline some of the significant failures in the rational use of health resources which resulted from inadequate interfacing of health and welfare programs.

Notwithstanding the foregoing, however, the Task Force recognized that the overall purpose of the Committee on the Cost of Health Services is "to advise the Ministers of Health on ways and means by which the

costs of operating health services could be maintained at a reasonable level" and consequently it tried to limit its scope to those elements of health and welfare programs which impinge most directly on the rational use of health facilities.

As a basis for analysis and subsequent planning the Task Force classified in-resident patient care loads, ambulatory care services at the hospital level and certain additional related facilities and services. These are summarized in Section 2 and outlined in detail in Appendix 1.

2. SUMMARY OF PATIENT CARE CLASSIFICATION

A. In-Resident Care

Items in this classification are in-residence care functions, not methods by which the functions are carried out. Nothing in this classification implies that the functions cannot be grouped in a variety of ways or that the functions have to be carried out in specific buildings with specific names. There are gaps in the existing system for example, some patients in the borderline category described in item 4 below neither are the clear responsibility of the hospital plan nor are they always accepted as the responsibility of welfare departments.

1. Acute Treatment

For adult medical and surgical, paediatric, maternity, newborn, and psychiatric patients.

2. Assessment and Rehabilitation

For patients who would benefit from a planned intensive and comprehensive program of rehabilitation. The patient needs constant assessment and should continue in the category as long as he is making progress. He would normally be expected to improve to a point where he can go home or to a less intensive level of care.

3. Extended Hospital Care

For persons of all ages who do not require acute hospital care and treatment but do require regular and continuous medical attention, skilled technical nursing on a 24-hour basis, and special techniques to maintain function.

4. Intensive Personal Care with Nursing Supervision

For persons having advanced physical or mental illness that is reasonably stabilized and who primarily require personal care under the supervision of a graduate nurse. Nursing care required would be considered only as an adjunct to personal care. While personal care attendance is required on a 24-hour basis, the nursing supervision need not be.

5. Limited Personal Care

For residents who are slowing down in physical and/or mental faculties and therefore require continuing supervision and some assistance with the activities of daily living.

6. Supervisory Care

For residents who need room, board, and laundry service and who, because of frailty due to normal aging or minor physical or mental disability, require some supervision in the activities of daily living.

8. Hospital Ambulatory Services

1. Emergency Services

Including services for true emergencies (trauma and acute episodic illness) and services to patients who come for medical attention for which the advice of a family physician would normally be sought.

2. Ambulatory Special Services

Usually services to patients referred from physicians on the staff of the hospital. Includes

surgical services that require general anaesthesia but do not require in-patient admission.

3. Organized Outpatient Service

Historically care for indigents and the provision of teaching. A likely trend is toward providing multi-disciplinary clinics for services not available from individual physicians.

4. Service by Geographical Full-time Physicians

5. Outpatient Diagnostic Services

6. Organized Day Care/Night Care Programs

Comprehensive programs of therapy or instruction involving attendance for several hours.

7. Well-Patient Clinics

C. Related Facilities and Services

1. Home Care

2. Hostels

3. Senior Citizens' Housing

4. Transportation

Recommendation 1:

That a uniform classification of care functions be used throughout Canada and that the classification set out in Appendix 1 be considered for this purpose.

Several of the items in this classification offer appropriate alternatives to adding in-resident beds. These are discussed below.

Home Care (item C1) may be medically indicated for a patient even when there is no economic justification. However, when economic aspects are considered, the following information is pertinent. A Master of Science thesis

at the University of Toronto (March 1969) shows - on the basis of a rough separation of "hotel" from treatment costs - that the treatment cost of patients in the Home Care Program of Metropolitan Toronto was between the per diem treatment cost in chronic hospitals and that in convalescent (rehabilitation) hospitals in the area.

The specific figures for fiscal 1966-67 were \$9.29 per day for home care patients referred by hospitals and \$8.39 for home care patients referred by community agencies, compared with estimated treatment costs of \$7.67 per day in chronic hospitals and \$11.40 in convalescent hospitals.

The hospital data were computed from Ontario Hospital Services Commission allowable per diem costs, deducting meals, laundry, other directly attributable "hotel" costs, and pro-rata share of overhead.

Any saving in total dollar costs per patient day represents shifting the burden of the "hotel" part from the hospital to the family or the welfare agency and does not represent a clear saving to the community as a whole. There would, of course, be justification for transferring patients to home care programs, even when there was neutral medical indication and no operating economies if the community were short of beds in the hospital departments where the home care cases originated.

Recommendation 2:

That home care be considered as an economic alternative when:

- (A) it is medically indicated as a form of treatment; and
- (B) treatment cost can be demonstrated to be lower than the same treatment provided in hospital; and
- (C) beds are in short supply and are required for patients who cannot be served by alternative means.

Ambulatory Special Services (item B2): evidence is accumulating that a significant saving of inpatient days can result from increased use of day surgery. (up to 8% estimated in a children's facility).

Organized Outpatient Services (item B3): It is estimated that multi-disciplinary clinics can save on inpatient beds. (e.g., in the assessment of the multiple handicapped).

Outpatient Diagnostic Services (item B5): Reduction in demand for beds as well as some reduction in operating costs should be expected when the diagnostic workup is completed before admission for patients whose admission is expected. An impediment exists however where inpatient services are insured and outpatient diagnostic services are not.

Recommendation 3:

That consideration be given to insuring outpatient diagnostic services in every province whether or not a medical care insurance plan is implemented.

Organized Day Care/Night Care Programs (item B6) are a very promising alternative. For example, provision of a medical day-care service (including diagnostic clinics such as in item B5 above) produced a potential 5 per cent saving in medical inpatient days at a children's facility. Such day-care services as diabetic clinics are reported as being highly successful.

Earlier discharge and less frequent return to hospital are expected when adequate day-care programs are available for psychiatry, rehabilitation and geriatrics. Saskatchewan reports significant reductions in the demand for inpatient psychiatric beds as a result of day-care and outpatient programs.

Recommendation 4:

That impetus be given to the development of a broad range of ambulatory services in order to permit a reduction in the active treatment bed ratios which would otherwise be found necessary.

Hostels (item C2): The rationale for hostels follows the rationale for home care. Hostels are needed when: (1) there is a medical indication that the patient needs treatment in a nearby hospital but would profit from sleeping out (e.g. child with mother); (2) if it can be shown that the dollar cost of treatment would be lower - an unlikely eventuality; (3) if providing hostel accommodation either frees a hospital bed for which there is a demonstrable need, or provides an alternative to new construction of hospital facilities for which there would be a demonstrable need in the absence of hostels.

In remote or rural areas, an obsolete small hospital or a hospital that is uneconomic as an active treatment unit can be considered for use as a hostel when factors of distance or terrain make it advisable to keep a certain class of patients within easy reach of the doctor for a given period of time, and when the active-treatment facilities in the building have been abandoned or converted to sleeping or office space. This position is based on that taken by Dr. Karl Evang, Director-General of Health Services in Norway, in Health Services in Norway (Oslo, 1960).

Hostels and day care are complementary. One reason for having hostels arises when day care is available but beds are not. Since hostels and day care centres may be physically separated (with even small distances important for some cases) the element of transportation (item C4) should be added. Hospitals or other day care centres should have limousines, buses, ambulances, or other appropriate vehicles available for

patient transfer to day-care centres in both urban and rural areas. The economic decision rests on demonstration that the sum of hostel and transportation costs is lower than the inpatient "hotel" costs in hospital.

Transportation (item C4): Transportation of patients from home to outpatient or day-care facilities may be more economical than either home treatment or inpatient admission. Transportation between communities may be more economical and more satisfactory than multiplying small hospitals whose service could be minimal at best.

These are some of the factors which should be taken into account in reaching decisions on hostels and transportation. A specific recommendation regarding substitutability between facilities and services appears in Section 6.

3. THE TOTAL SYSTEM

The approach of the Task Force has been to look at effective methods of reducing the overall expense to the economy as a whole, rather than to consider recommendations which might reduce the cost of the hospital insurance plan by simply shifting the expenditure to another sector.

If the levels of care set out in Section 2 are provided on a regional basis according to each region's demonstrated needs, they will provide a continuous spectrum of care permitting each patient to be located in the level of care most appropriate to his individual and changing needs.

It is not considered to be enough simply to provide the levels of service. They must also be: understood by the medical and paramedical personnel who will be using them; functionally and administratively integrated; provided with assessment and reassessment

procedures and transfer agreements so that the patient can be moved as efficiently as possible to the level of care he requires.

If there are structural or functional gaps anywhere in this spectrum, it follows that the remaining levels will be inappropriately used.

Certain general conclusions and assumptions emerged during the work of the Task Force.

A. That past priorities for funds (both for operating and capital) seem to have been heavily weighted in favour of the general hospital and related acute treatment facilities. As a consequence, it is probable that in many jurisdictions acute inpatient facilities either represent a sufficient supply or the field with the least shortage. As a further consequence, it is reasonable to believe that unfulfilled requirements, particularly in the levels below "in-resident level A2", are being met in whole or in part through improper use of acute facilities.

The Task Force reviewed the results of six utilization studies in urban areas across Canada, a study in New York State and a recent survey reported from England. In some of these, complete results were available, in others, only summary statements.

However, all the studies indicated the presence of acute general hospital beds of significant groups of patients who could, in the opinion of the attending physician or the outside observer, be more appropriately handled in other levels of care - some needed levels below "in-resident level A4".

One study in particular, estimated acute hospital "bed" savings which would arise from utilizing appropriate types of ambulatory care. In many of the areas studied there was pressure for construction of more acute hospital beds.

B. That the shift of patient care delivery from active hospital admission to ambulatory facilities or to admission to alternative inpatient facilities will save both capital and operating cost per case treated.

C. That there are gaps in the existing system so that patients who fall in the borderline category of "in-resident level A4" are, in most provinces, neither clearly the responsibility of the hospital plan nor always accepted as the responsibility of welfare departments.

D. That, generally speaking, the emphasis has been on inpatient admission rather than on care without admission (ambulatory care) and that, while there have been successful experiments in ambulatory care, these have been limited by lack of interest or lack of funds and are not in general use.

E. That for alternatives to inpatient care to be fully developed and utilized they must be insured services because it is unlikely that abuse can be prevented if the individual patient is faced with personal expense if he is treated one way but incurs no direct personal expense if he is treated in another way.

Recommendation 5:

That the Federal Hospital Insurance and Diagnostic Services Act be amended as necessary to include in-resident care classification levels 1 through 4 as insured services under the Act.

Recommendation 6:

That, in general, planning for construction should give lower priority to the provision of additional acute inpatient facilities than to upgrading, replacing or remedying the deficit elements in the system whether they be ambulatory care, diagnostic facilities or long term institutional facilities.

Recommendation 7:

That a method of organized regular medical assessment should be provided for all levels of facility as a basis for movement of patients to the most appropriate level of care. In this connection, no person should be placed in a long-term institution or facility without a careful medical assessment. If assessment indicates a potential for improvement, the patient should be placed under a rehabilitation program. No patient should be placed in an in-resident facility if he can be as well or better cared for on an alternative basis, e.g., ambulatory.

Recommendation 8:

That special research and demonstration units be established in selected areas to develop new and efficient methods of providing and delivering patient care within the context of the levels of care outlined in Section 2 above. Means of evaluating such programs should be set out at the beginning of their period of operation.

The federal grant towards construction of acute and "chronic" hospitals filled a distinct need but is to cease in 1970. The Task Force appreciates that the large number of acute beds provided during the period the grant was available may have lessened the urgency of a grant for acute inpatient facilities.

However the Task Force feels that a very real need could be served by a grant which could be applied to modernization, remodeling, replacement of obsolete facilities and filling deficits in the system (e.g. construction of ambulatory service facilities).

Recommendation 9:

That a federal grant towards construction of all levels of facility be reinstated with provision for its use in provincial and regional programs to achieve a balanced arrangement of facilities.

Under the terms of the Federal-Provincial agreements governing hospital plan operations, hospitals may not retain from gross earnings from outpatient diagnostic services the capital component of providing buildings or grounds for these services. However, a capital component of cost is included in the revenues which private facilities retain. Consequently private enterprise is able to finance the capital cost of expanding diagnostic services while public facilities are financially discouraged from doing so. The Task Force feels it is important that hospitals have a high level of diagnostic services which can be operated with enough volume for efficiency.

Recommendation 10:

That the Federal and Provincial Governments enable public facilities to compete with private facilities on even terms through one of the following mechanisms:

- (A) provide the full capital requirements for the provision of outpatient facilities and continue to capture all revenues.
- (B) allow the public facility to retain the capital component of cost relating to buildings and grounds for outpatient services rendered.
- (C) exclude outpatient facilities from normal hospital budget mechanisms and allow them to be operated as "ancillary" operations with only net profits considered as offset revenue.

4. PROVINCIAL AND REGIONAL HEALTH PLANNING

There appears to be universal agreement that our nation must now concentrate upon organizing health facilities and services into effective, efficient and economical regional systems of comprehensive health care available to all.

The concept of area-wide or regional planning for health facilities and services has substantially been accepted as a viable and effective approach in meeting the above-noted goal and, in our opinion, regional health planning is imperative to achieve fully implemented, integrated, and balanced health care systems of services and facilities. The need for regional planning is so evident, and the economies and improvements are so significant, that this development should be proceeded with immediately. Its purpose is to evaluate health care needs, assess resources, define goals and objectives, establish priorities and decide on courses of action for coordinated development of health service and facility needs. Planning is essential for all health care institutions and agencies and it must be a continuing process.

Planning for health facilities must be based on planning for total health services. Health facility and service planning is too important and too complex for any single organization to handle alone. Accordingly, a true partnership of comprehensive health planning between the government and the voluntary sectors is essential if the full potential of the health sciences to society is to be realized. It would be reassuring to believe that voluntary efforts could bring about the needed change in efficient and effective delivery of health care at an acceptable rate, but this is not realistic. History has shown, and experience today continues to demonstrate, that, where change is needed, government must be directly involved as only government has the financial and organizational resources and authority to undertake the necessary changes.

It is the opinion of the Task Force that only at the regional level can sufficient perspective be gained to effectively organize and integrate the varied health resources of the region.

While regional planning is rational and necessary, it must be subordinate to a revamping of total health care planning at the provincial level. In other words, it is essential for the province to have an overall program of health care delivery which recognizes the existing lack of coordination between health and welfare and for regional planning organizations to be implementing area-wide programs which are clearly within the framework of the province-wide program. Moreover, regional planning organizations must accordingly become HEALTH planning groups rather than simply hospital planning groups.

Principles of Regional Planning:

After the role of each health facility has been established within the context of the Regional Health System -

1. Each health care facility or agency is responsible for providing its services to the community and region, not as an isolated and competitive entity, but as an integral part of a system designed to meet the total health needs of the people effectively and economically.
2. Each health care facility should be established, modernized or expanded solely in relation to regional needs for health service, rather than according to the history and aspirations of the institution.
3. Each health care facility should plan its services and facilities with respect to the market area for the specific health services the facility is to provide, which area may be shared with other institutions.
4. Each health care facility should undertake only those services where the volume and scope of service will provide an adequate foundation on which to build an economic and effective service with high professional standards.

Recommendation 11:

That administrative arrangements be established which will provide for full coordination of the total health care delivery system at the provincial and higher levels. This implies arrangements whereby the fields of health, welfare, mental health, hospital plan operation and medical care plan operation can be viewed as elements of a single function and health planning body. In one province, as an example, there are five agencies involved in these functions.

Recommendation 12:

- (A) That each provincial health planning body establish individual regional health planning boards within the province as required which would be responsible for the continuing planning, development and implementation of a regionalized, comprehensive, integrated and balanced health care system of services and facilities within the context of the region's total spectrum of health services and co-ordinated with the planning of other community, regional, provincial and national health and social agencies.
- (B) That the regions be based on the health-service market area to be serviced rather than on municipal, county or other defining boundaries within a provincial jurisdiction. There may be some regions which are inter-provincial in scope and the provincial planning bodies involved should cooperate where health service market areas cross provincial boundaries.
- (C) That uniform regions be established in each province where feasible for those functions which relate to health in its broadest sense, including health related facilities which are usually the responsibility of other departments, e.g., homes for special care; that departments of the Provincial Government recognize and

adopt the established regions for the purposes of planning, organizing and implementing programs; and that voluntary agencies be encouraged to use the same uniform regions.

- (D) That regional health planning boards be broadly representative of providers of health care, government and non-governmental agencies and other groups such as consumers who are concerned with health care.
- (E) That regional boards be financed by Government and be responsible to the Provincial Government Body responsible for overall Provincial health planning as referred to in Recommendation 11.

Recommendation 13:

That regional boards be empowered to employ the necessary staff to carry out their functions.

Recommendation 14:

That each health-care institution and agency be included in the jurisdiction of a Regional Board.

Recommendation 15:

That each health care institution and agency be required to develop its plan within the framework of the regional plan.

Recommendation 16:

- (A) That no change in physical facilities or services which significantly affects the nature of any health care institution or service be undertaken without the prior review and approval of the regional board. Major planning decisions involving more than one region would be made by the provincial Government health planning body based on recommendations of regional boards.

- (B) That the responsibility of regional boards extend not only to approval of new, modernized and expanded facilities but also to conversion to alternative use or closure of facilities.

Recommendation 17:

That no agency at any level of government construct or alter the scope of services of any health care facility without consulting with and securing approval of the regional board; and that in case of dispute, the Provincial Government Health Planning Body have ultimate authority.

Recommendation 18:

That steps be taken by the Provincial Government to ensure equitable sharing of the capital costs of health care services throughout the entire region to be benefited.

Recommendation 19:

- (A) That increased attention be directed to the grouping (e.g., by merger or "satellite" arrangements) of hospitals under a single administration, which appears to be an effective means of achieving greater efficiency through shared services and pooled resources. Development of needed "satellite" or branch hospitals in the suburbs by existing large and outstanding hospitals in the central city should be encouraged. (see B below)
- (B) That growing urban and suburban areas consider the establishment of community health service centres before embarking upon building programs for new general hospital beds. Such neighbourhood service centres would be operated as branches or satellites of established general hospitals and would not include beds for overnight care.

- (C) That there should be a strengthening of relationships among hospitals through formal affiliations providing for joint use of expensive services and facilities and transfer of patient and service arrangements.

Recommendation 20:

That cooperative working relationships among hospitals and other health care facilities and agencies, e.g. nursing homes in the same community or adjacent communities, be encouraged if the needs of the region are to be met in a coordinated and effective way. This can be accomplished through formal affiliations, patient and service transfer arrangements and joint use of facilities.

Recommendation 21:

That additional incentives be provided to encourage the sharing of ownership and operation of such facilities as laundries, laboratories, radiology facilities, computer services, pharmacy and dietary services.

The Task Force recognized that if regional planning is to work, the medical profession must be directly involved in the planning effort. It is also recognized that medical staff cannot be solely organized on a single hospital basis if effective delivery of medical care on a regional basis is to be provided.

Recommendation 22:

That medical involvement in regional planning be accomplished through such mechanisms as representation on the regional board and establishment of representative and responsible regional medical staff advisory groups to the regional board.

Recommendation 23:

That the method of granting medical staff privileges in major urban areas be studied to ensure appropriate use of facilities and services.

5. TEACHING FACILITIES AND SERVICES

There seems to be some evidence that cooperation between universities and existing hospitals has been inadequate in some areas and, as a consequence, there has been over-bedding and duplication of facilities occurring in order to meet university requirements for teaching. In this connection it is noted that approval for residencies in several medical specialties is based on the number of beds assigned to the service rather than on the volume of inpatients and outpatients handled by the service.

The Task Force noted a tendency for some universities to try to emulate the medical schools located in the major metropolitan areas and to press for highly sophisticated patient treatment and research facilities when there is insufficient evidence that an adequate patient volume for these services exists. The Task Force felt that the need for rational planning (including the principle that all units in a system do not have to achieve the same level of sophistication) should apply equally to medical school development as to the service hospitals.

The creation of separate treatment facilities under the control of and for the use of the university should not be accepted as the only solution to solving university teaching problems.

It was noted that, by 1970, the hospital construction funds from the Federal Government will be limited to teaching facilities. At this time there is no strong indication that there will be a nationwide application of the regional planning principle (mentioned above) to the provision of facilities for medical education.

Recommendation 24:

That planning for university teaching facilities be reviewed by the regional planning body to ensure

that facilities are not being unnecessarily duplicated; and that where service needs are already being met, it be necessary, before proceeding with new construction, to demonstrate the impossibility of using existing facilities for teaching purposes.

Recommendation 25:

That the Royal College of Physicians and Surgeons be asked to re-examine the existing policy of accrediting residency training programs in certain medical specialties on the basis of beds available and to consider substituting a policy based on the volume and type of inpatients and outpatients handled by each service.

Recommendation 26:

That the Federal and Provincial Governments cooperate in giving careful joint consideration to the need for university medical teaching facilities to ensure that, where highly developed teaching and research facilities exist, these should be used by other medical teaching units wherever practical rather than duplicating the same level across the nation.

6. DETERMINATION OF NEED FOR BEDS AND SERVICES

Utilization of Inpatient Facilities in Canada

As a main principle, the Task Force recognized that the requirements for facilities in any of the various levels or types of care set out is a function of the planning of the total program and it is very clear that any attempt to formulate for any of these in isolation an objective criterion of need independently would be difficult. National data on utilization reveal that there is no simple utilization standard.

Institutional utilization varies considerably from one province to another; generally speaking, it was lowest in the East and highest in the West. Some

data and descriptive material showing total and age-specific rates of institutional use are set out in Appendix 2. It is very difficult to explain the apparent differences revealed by the data and the Task Force feels that research into this matter should be undertaken.

Recommendation 27:

That a study be carried out across the country by a national research team to investigate factors associated with high and low utilization in the different areas of Canada. Attention should be focused on why there are large numbers of active beds in certain areas and few chronic beds; why there are personal care patients in active beds in many communities across the country; and why ambulatory services are not used more.

While there is no uniform pattern of total utilization among provinces, it is obvious that, within each province, the older age groups dominate in the use of all levels of in-resident facility including acute hospitals. Again in spite of differences in utilization among provinces, studies across the country have shown that significant numbers of acute beds are occupied by patients who could be looked after better in other in-residence facilities, as ambulant patients, or at home.

Methods used by provinces for the calculation of acute beds are more detailed than for other levels of care. The main reason is that comprehensive statistical data exist and the acute level has been easier to define. Several provinces make detailed studies of present and past use of beds by age group and by area and compare these with other areas considered to be similar.

A utilization rate (possibly adjusted after comparisons) is then applied by age group to the estimated future population. Calculations for rehabilitation, acute psychiatry and extended hospital care are usually based on bed ratios per 1000 total population or on an

age-specific basis. Reference is made in Appendix 3 to specific measures and techniques used by some provinces.

These techniques can have the disadvantage of projecting unsatisfactory past patterns into the future unless adjustments are made. They are useful for over-all planning pending the development of more precise information but should be used with caution.

Recommendation 28:

That in applying present detailed methods based on incidence rates of hospitalization, the projected rates be adjusted to make some allowance for the results of utilization studies (e.g. acute hospital beds occupied by persons who require other levels of care).

Recommendation 29:

That newer techniques for waiting-list analysis be used to analyze demand and the effect of providing additional beds. See Appendix 4.

Recommendation 30:

That as a further refinement of present methods:

- (A) utilization studies be carried out of patients requiring institutional care (patients presently in hospitals and other institutions or known to physicians or agencies, including the assessment of waiting lists).
- (B) in the light of this information, the availability of facilities be assessed and a construction program based on overcoming present shortages and allowing for expected population growth (by age group) be recommended.
- (C) that the proportion of patients who could be or could have been handled more appropriately on an ambulatory basis or at home be identified in the course of such studies.

Recommendation 31:

That in the short run, more stringent limitations be placed on the number of additional new acute beds except where a community can demonstrate either (A) inadequacy of present bed supply to meet existing measurable demand or (B) no slack to meet present demand projected for predicted population five years ahead. Additional exceptions should also be made for new acute construction that will not expand total bed supply (e.g. replacement of condemned facilities, or extension in one community to serve another where a small hospital is being closed) and for remodeling. In both cases it should be required to demonstrate that the new construction or remodeling will (A) meet an existing service need, (B) improve quality in some way that can be measured or (C) deliver medical care at a lower cost than before.

Recommendation 32:

That the research approach of first assessing the service needs of the ambulant patient and only later determine the bed need be tested against the usual approach of assessing bed needs and then relating service needs and space to the number of beds.

Assessing the Total Health System

It is likely that in assessing the total system in each province priorities for rationalizing the system will vary. Ambulatory programs which may have high priority in large urban centres may be difficult to implement in rural areas with scattered populations. Pressures for active treatment beds in some areas may represent real need; in other areas, the pressure may represent the need of an aging population in the absence of suitable personal care accommodation.

There is an element of "substitutability" between facilities and services. For example, transportation can be provided as an alternative to dispersal of

facilities; transportation to the outpatient department may be more economical than some types of treatment in the home; hostels, personal care homes or even elderly citizens' housing may enable better use to be made of hospitals; unskilled labour may be a substitute for expensive mechanical systems of transport within the hospital; on the other hand, automated laundry and laboratory equipment, etc. may be substituted for labour.

The objective is to provide a basis for decision on the grounds of the efficiency of patient care rather than to relate plan approval to specific types of facilities.

Recommendation 33:

That a standing Federal-Provincial Committee be established to examine and make decisions on a cost effective basis regarding proposals submitted from provinces for the introduction of alternative combinations of capital and operating funds for the provision of the type of patient care which comes under joint Federal-Provincial coverage, e.g. the combination of outpost nursing stations, air and road transport, and base hospital facilities as an alternative to a network of small peripheral hospitals.

Psychiatry

The Task Force on Beds and Facilities was asked by the Committee to consider specifically the question of psychiatric facilities in general hospitals. (Another Task Force has gone extensively into other aspects of community psychiatric services). The Task Force on Beds and Facilities believes it important to disperse psychiatric facilities rather than maintain the pattern of centralized units.

However the members emphasize the need to develop ambulatory services, such as day care and outpatient units, and community health programs in

conjunction with, or even in advance of, inpatient beds. (See Section 2 on 'alternatives'). The figure of 0.5 bed per 1,000 population has often been quoted as a guide for determining the acute inpatient beds which should be attached to general hospitals to serve regional needs. This ratio is often said to be adequate only if sufficient ambulatory services are provided. The following recommendation was made notwithstanding that qualification.

Recommendation 34:

That emphasis be placed on early development of ambulatory treatment and community services and that a lesser figure than 0.5 beds per 1,000 be used until better information is available for determining the need for in-patient beds. Priority for the addition of new psychiatric beds also depends upon the extent to which existing units (usually in large separate institutions) need to be replaced or remodeled for program or safety.

Facilities for Remote Areas

1. Small Hospitals

About 500 beds in Canada are in acute hospitals of less than 10 beds each and 4,000 beds are in acute hospitals of less than 25 beds each (or about 4% of general beds). The Task Force believes that small units such as these are not conducive to efficient care of acceptable quality. A minimum size might more appropriately be 75 to 100 acute beds with ample provision for ambulatory services. In major urban centres the appropriate minimum should be higher. However in this country travel time to the nearest community large enough to justify an appropriately sized hospital can be great. Accordingly guides are suggested for regional and provincial authorities dealing with the problem when road travel time of more than $1\frac{1}{2}$ hours at reasonable speeds

is a factor. Where travel must be by air or water, factors such as weather conditions and availability of transport should be assessed by the regional and provincial authorities.

Recommendation 35:

The only occasion for considering a hospital of less than 75 to 100 acute beds is where travel time to a community hospital exceeds one and one-half hours; a small hospital might then be considered for an area with 5,000 - 6,000 population, which might be expected to attract a minimum of two and preferably three physicians. Such a facility would be expected to send out a significant proportion of its cases to a larger centre which could leave a local need of about 30 beds.

2. Alternatives to having a Hospital in remote areas where a physician may be expected to reside - the Task Force considered, as a base for a physician, a unit which might be termed a "medical station" (or "outpost" or "clinic"). Proposals have been advanced for a unit with good primary diagnostic equipment and space where a bed could be set up for observing a patient or retaining him during bad weather while he awaits transportation to a larger centre. While these might be considered to be oversized offices, young physicians who might locate in such areas may not be able to finance such a facility. The Task Force is not yet prepared to recommend such units but suggests further study of their feasibility. It is expected that if such a unit were established, the physician would be affiliated with the medical staff of a hospital to which he would admit or refer patients for admission. Federal, provincial and regional policies would be required on financing of capital and operations, ownership, and so on.

Recommendation 36:

That for small remote communities which do not justify a hospital but where a physician might be expected to reside, provincial and regional authorities give thought to the feasibility of a medical station with diagnostic equipment and space where a bed can be set up for observing a patient or retaining him during bad weather while he awaits transportation to a larger centre.

3. Alternatives to having a Hospital in remote areas where a physician is not expected to locate - The answer to the problem of the very small and very remote area seems to be the "nursing station" or "outpost" and many of these are already in operation, as by the Grenfell Association and the Red Cross. Such units should be operated by a nurse with special training (e.g. as provided in the Dalhousie University course in outpost nursing), be connected with good telephone or radiotelephone service and have transportation service to a hospital.

Recommendation 37:

That nursing stations or outposts having adequate arrangements for communication with and transportation to a hospital be used to provide service to very small and remote communities.

There is concern that individual physicians may attempt to provide in small hospitals and medical stations too broad a range of services for the facilities and back-up services available. Provincial hospital licensing authorities should set out limitations for service in such units. It is felt that provincial medical licensing bodies should accept responsibility for ensuring that physicians do not exceed limitations in such circumstances.

Recommendation 38:

That provincial hospital licensing authorities set limitations on the range of service to be provided in small hospitals and medical stations on the basis of patient safety and efficiency and that the medical licensing bodies should restrict physician licenses in such areas to conform to these limitations.

7. SPECIALIZED HOSPITAL SERVICES - STANDARDS AND NEEDS

It is the function of planning to aim at assurance of maximum availability, standards and economy of service within existing or potentially available resources. This implies reasonable deployment of facilities in terms of the geographic characteristics of the area; maintenance of adequate standards of staffing in terms of current practice; and organization of services in a manner to assure maintenance of optimum standards and efficient utilization of highly specialized personnel and facilities.

The last is particularly important in conserving scarce resources and in maintaining costs at a minimum level compatible with high standards of service. It is in this context that the need for specialized facilities has been reviewed.

The Task Force selected the following specialized hospital services for review:

- Burn units
- Coronary care units
- Intensive care units
- Cardiac surgical services
- Radiation therapy units
- Radioisotopes facilities
- Renal dialysis and transplantation units.

Although no finite criteria were employed in the selection of the above services, the following characteristics were sought:

A. That specially trained, highly skilled personnel, who are in short supply, are required to operate the service effectively;

- B. That in order to maintain their skills, the personnel have to have an adequate volume of patients;
- C. That because of competition for scarce personnel only enough services should be established to meet adequately the needs;
- D. That because by and large, the overall cost of operating the special services is high, the number of them should be kept to the minimum consistent with meeting the need.

The Task Force readily acknowledges that there are other specialized services which might have received consideration. Their omission is in no way an insinuation that they do not play an important role in medical care.

Provincial Deputy Ministers of Health were asked what criteria were used in authorizing the establishment of the services listed. Few provinces use hard and fast guidelines, each application being reviewed on its own merit.

It also became clear that teaching needs as well as community service was involved. Thus, for instance, an international authority on open heart surgery recommended two open-heart surgical units to the Minister of Health of one of the provinces solely because a second unit was needed to meet the teaching needs of a medical school.

BURN UNITS

A burn unit is a specialized intensive care facility for the treatment of patients with 2nd and 3rd degree burns. The severity of burns requiring care in a burn unit is variable, depending upon the age and general physical condition of the patient.

None of the provinces has a policy on the establishment of burn units.

The personnel required for the successful operation of a burn unit require specialized training, and are therefore very scarce. For them to retain their specially acquired skills, they need practice.

Recommendation 39:

That burn units be restricted to teaching centres in major metropolitan areas, and that there not be more than one such unit in each metropolitan area; although no finite recommendation is made with reference to a population base for the establishment of a burn unit.

CORONARY CARE UNITS

More Canadians die from coronary heart disease than from any other disease entity. It is therefore essential that every general hospital be prepared to treat coronary patients. These patients do best when they are cared for by specially trained physicians and nurses in units devoted solely to the treatment of acute coronary heart disease - i.e., coronary care units.

It is however, unrealistic to expect every hospital to operate a separate coronary unit. When no such unit is available, the patient should be admitted to the intensive care unit of the hospital.

Ontario is the only province using a formula to determine the need for a coronary care unit. The determination is made not on the basis of a specific number of beds, but upon the number of cases of coronary thrombosis treated. For a separate unit, the work load of the hospital must call for a unit of at least three beds, calculated as follows:

- 1) let n be the annual number of cases of coronary thrombosis;
- 2) add 30% for suspects;

- 3) assume that the average length of stay is 5 days;
- 4) assume that the occupancy of the unit will be 85%, then,
 if $n + .3n = 400$, we have $400 \times \frac{5}{365} \times \frac{100}{85} = 6.4$ beds.

On the average, depending upon the individual policy for length of stay, one bed is required for 60-100 cases per year.

The minimum size of hospital required for a coronary care unit varies from province to province:

Manitoba, New Brunswick	100 beds
Newfoundland, Nova Scotia	200 beds
Saskatchewan	300 beds

The three essential ingredients for a successful coronary care program are:

- the physical facilities
- the hardware
- the staff

Of these three ingredients, by far the most important is the staff. To care adequately for coronary patients requires physicians and nurses who have had special training.

Recommendation 40:

That before the establishment of a coronary care unit is authorized, the hospital meet the following requirements:

- (A) Staff must be specially trained and experienced in coronary care;
- (B) Coverage by staff must be adequate;
- (C) Using the formula outlined above, the proposed beds are in agreement with the expected caseload.
- (D) Hospitals with a workload requiring less than two beds should consider the development of a joint coronary care - intensive care unit. Two beds

constitutes a full workload
for a specially trained nurse
on a 24 hour basis.

INTENSIVE CARE UNITS

Only Ontario uses a formula to determine need; its formula is 3% to 3½% of medical and surgical beds.

The minimum size of hospitals approved for an intensive care unit varies from province to province:

Manitoba, New Brunswick, Saskatchewan	100 beds
Newfoundland, Nova Scotia	200 beds

Recommendation 41:

That before the establishment of an intensive care unit is authorized, the hospital meet the following requirements:

- (A) Staff must be specially trained and experienced in intensive care;
- (B) Coverage by staff must be adequate;
- (C) The proposed intensive care beds have been estimated using a formula of 3 to 4% of the medical and surgical beds as representing the intensive care requirement of the hospital;
- (D) Hospitals with a workload requiring less than two beds should consider the development of a joint intensive care - coronary care unit. Two beds constitutes a full workload for a specially trained nurse on a 24 hour basis.

HEART SURGERY SERVICE

Dr. Dwight C. McGoan has stated, "Cardiac surgery is inherently a task for a medical centre, where sufficient clinical material is available for this team to maintain skill and efficiency. Anaesthesiologist, cardiologist, surgical and general nurses, technicians,

engineer, social workers and others, as well as the surgeon and his assistants, each holds a key spot. The cardiac surgeon plays a major part, but even with training, hard work and discipline that he must master, he is but a leader, and not a soloist."

It has been variously stated that it requires a population of 500,000 (B.C. Medical Association) and 1,000,000 (McGoon) to support adequately a fully developed centre for cardiac surgery. Experience has shown that the number of operations that should be performed to assure efficient functioning of a heart surgery unit with one surgical team is between 50 to 75 (minimal) and 150 to 170 (optimum) per year. According to McGoon, a population of one million will yield in one year about 100 patients requiring open heart operations, and another 100 requiring closed cardiac or great vessel operations.

Recommendation 42:

That cardiac surgical facilities, should be restricted to the major teaching centres. Because it is not likely that a health service market area of under 500,000 population would generate the required minimum workload for one such unit, nor that a service area of more than 1,000,000 population would necessarily justify the existence of more than one such unit.

RADIOISOTOPE FACILITIES

There is much controversy about the establishment of radioisotope facilities in hospitals. In Saskatchewan, patients are referred to one of the two provincial Cancer Clinics for even the simplest diagnostic tests. Each clinic serves a population of 500,000.

Chamberlain and Kuhl state, "The use of radioisotopes in clinic medicine is now a sufficient practical value to justify a laboratory for this purpose in most hospitals of 200 beds or larger capacity."

On the other hand, Dr. Leonard Rosenthal of the Montreal General Hospital has stated, "The present spectrum of diagnostic tests utilizing a gamma emitting radioactive element is sufficiently wide and clinically useful a routine procedure to warrant introduction of nuclear medicine services in community hospitals with as few as 100 beds." According to Rosenthal, radioisotope laboratories have not been established because there is a dearth of trained physicians to supervise them.

As many of the patients who need diagnostic and therapeutic radioactive isotopes will not require hospitalization, it seems inadvisable to relate the need for isotope facilities to institutions of specific bed size. Among the variables that influence the demand for radioisotopes is the sophistication of the medical profession in the community. Because of this it is also impractical to relate the need to a definite population base.

Recommendation 43:

- (A) That therapeutic radioisotope services and in vivo diagnostic services involving patient scanning be limited to hospitals serving major geographic areas and should be provided only when the need for good care makes a unit necessary; and adequately trained staff are available;
- (B) That in other hospitals, low level in vitro diagnostic services involving small quantities of radioactive material of low toxicity and simple well-counting devices should be considered when these procedures constitute an economically sound alternative to the more conventional laboratory procedures.

RADIATION THERAPY

With the exception of one province, which has two radiation therapy units within the capital city,

there does not appear to be any serious problem of duplication. In several provinces the situation is under tight control, because the programs are operated by Provincial Cancer Commissions, which operate the centres.

In light of the above comments, no recommendation is made.

RENAL DIALYSIS UNITS

Although intermittent hemodialysis constitutes a tremendous advance in the treatment of chronic uremia, it still remains a poor substitute for the delicate perfectly balanced mechanism of the human kidney. The patient existing on chronic hemodialysis requires repeated blood transfusions, strict dietary and fluid control, adjuvant medication and close medical supervision. With this regimen of therapy he may remain alive and function for a number of years. However, chronic hemodialysis is not without danger. Many medical problems and complications are associated with chronic dialysis: severe anemia, calcification of tissue, intercurrent infections and hypertension.

It is estimated that in 1968 between 30 and 40 thousand individuals in the United States developed chronic uremia from intrinsic kidney disease or diseases of other systems which may secondarily affect the kidneys. Therefore it may be assumed that between three and four thousand Canadian residents developed chronic uremia during the same period.

It is estimated that one out of five patients dying from chronic uremia would have been medically suitable for treatment by dialysis and/or organ transplantation. Based on these estimates, approximately 700 new patients became suitable for dialysis in Canada in 1968. The five year survival rate for patients on chronic hemodialysis is approximately 75 per cent with an annual case fatality rate of 5 per cent.

Unless it becomes feasible to increase substantially the number of transplants, there would be a gradually increasing number of patients indefinitely dependent on dialysis.

The problem of treatment of patients with terminal renal failure is that there are not enough trained personnel and not enough facilities and that it is extremely expensive. The average cost of maintaining a patient for a year on chronic hemodialysis varies between \$10,000 and \$15,000 for institutional dialysis and between \$5,000 and \$7,000 a year for home dialysis.

In the case of home dialysis these figures are exclusive of the initial cost of purchasing equipment and of training family members to operate the dialysis unit which usually amounts to another \$5,000 to \$7,000. The cost of a surgical procedure for renal transplantation with the necessary preoperative and postoperative dialysis varies between \$12,000 and \$15,000.

In addition the capital costs of establishing a program of chronic renal dialysis at a hospital are very high. The initial cost for facilities and equipment for a 10 bed chronic dialysis unit of 4,000 to 4,500 square feet has been estimated to be \$275,000 and the cost of recruiting and training personnel is estimated at \$110,000.

Chronic hemodialysis entails a continuing relationship between the patient and the dialysis centre over a long period of time, a fact which establishes certain criteria in projecting the number and distribution of centres.

To be effective, hemodialysis centres must be within reasonable distance of the patient's home, both for the provision of acute and chronic institutional dialysis, and for supervision of home dialysis.

There is a growing consensus that an optimum program would be one in which strategically located dialysis centres would be articulated with a transplantation centre. Because of the close relationship between transplantation program, clinical and laboratory research, and training, the most appropriate loci for such centres would appear to be medical teaching institutions.

On the other hand, hemodialysis centres should be articulated with community hospitals to facilitate both patient transfer and continuing education. Such a system would make it possible to develop continuing relationships among the institutions for patient care, for training and for research.

Recommendation 44:

That dialysis centres be established in hospitals and metropolitan areas where the caseload can justify an active nephrology service, such dialysis centres to be articulated in all instances with a renal transplantation centre in a major metropolitan area.

8. OTHER

Maximum Size of Hospital

Opinions have been expressed as to the reasonable maximum size of a hospital for efficiency. The Task Force was asked to consider this. It has not been possible to find satisfactory evidence of facilities being demonstrably inefficient because of size alone.

There may be other pertinent arguments against size which are related to such things as concentration of all beds in one geographical area.

Project Planning

The terms of reference of the Task Force did not include matters related to project planning and design. However, there are two related items upon which the Task Force recommends as follows:

Recommendation 45:

That the Federal Department of National Health and Welfare jointly with the provinces develop and promote objectives and planning guidelines for program planning and project planning, placing a new emphasis on diversity of function, expansibility, convertibility, and rehabilitation of physical resources.

Recommendation 46:

That provision be made to set up a National Health Facilities Design and Information Centre, either as a federal organization or an independent institute. Some of the functions of such a centre would be:

- to carry out research into design and construction standards;
- to evaluate departmental space requirements;
- to evaluate new construction management and industrialized-systems development;
- to examine the "best buy" balance between capital investment and low operating, maintenance and restoration costs;
- to test new equipment with particular attention to complex biomedical equipment;
- to provide data in a form useful for analysis and forecast.

APPENDIX 1

CLASSIFICATION OF CARE

A. IN-RESIDENT SERVICES

This is a classification of in-residence care functions and not of the methods by which the functions are served. Nothing in this classification implies that the functions cannot be grouped in a variety of ways or that the functions have to be carried out in specific buildings with specific names. There are gaps in the existing system so that patients fall in a borderline category described as level 4 below neither are the clear responsibility of the hospital plan nor are they always accepted as the responsibility of welfare departments. This level has been developed in considerable detail to delineate it clearly.

1. Acute Treatment

- Includes intensive care.
- For maternity, newborn, paediatrics, adult medical and surgical, psychiatry.
- For relatively short stay measured in days.
- For patients who are critically, seriously or acutely ill regardless of diagnosis and/or whose short-term care requires acute inpatient facilities. Frequent medical re-evaluation is necessary and immediate adjustment of therapy required. Facilities and personnel constantly present for concentrated skilled medical and nursing observation utilizing specialized techniques and equipped for emergent life saving measures.

For patients undergoing intensive investigation of a specialized nature for a potential or threatened serious condition where skilled medical and nursing observation and assessment is required and emergency treatment may be necessary. The patient should no longer be considered in this category when his condition

ceases to require: constant professional, skilled or expert, nursing care and observation; daily medical attention, reassessment and observation; and special diagnostic and treatment facilities available only in a hospital.

2. Assessment and Rehabilitation

This level of care pertains to patients with a disability not requiring acute treatment, but who can benefit from a planned and intensive and comprehensive program of mental or physical rehabilitation. This category requires constant assessment but patients should continue in this category as long as he is making progress, even though the final objective may fall short of total independence, or may result in a need for eventual institutional care.

It is presumed that at a point in time, a patient in categories 1 or 2 will become able to go home or to a less intensive level of care. The need for service at level A2 cuts across a variety of care facilities including the acute treatment hospital.

3. Extended Hospital Care

This level of care is for persons of all ages who do not require acute hospital care and treatment nor an intensive or comprehensive program of rehabilitation but who do require regular and continuous medical attention, skilled technical nursing provided under appropriate supervision on a 24-hour basis and, in addition, special techniques for the improvement or maintenance of function.

Patients at this level require initial and continuing medical assessment involving investigation and diagnosis for which appropriate facilities must be readily available. The aims of treatment are to control the disease process, to achieve maximum recovery of

function, to prevent further disability, to retard deterioration, and to alleviate pain and distress.

There are two aspects to this type of care:

(a) Supportive Care

This relates to persons with advanced chronic illnesses or disabilities who require skilled nursing care on a 24-hour basis under medical supervision, and/or specialized techniques to arrest or retard deterioration and would include mentally-unstable physically-disabled patients.

(b) Restorative Care

This relates to persons with chronic illnesses or disabilities whose general condition is such that they could not withstand an intensive and vigorous rehabilitation program, but who can benefit from a slower paced restorative regime designed to improve functional ability either for continued care at this level or to the extent that they can be cared for at home or at a less intensive level of care.

4. Intensive Personal Care with Nursing Supervision

This level of care is usually associated with the patient having advanced physical or mental illness that is reasonably stabilized and which is not expected to deteriorate in the near future (barring the occurrence of an additional disease or an accident). While personal care attendance is required on a 24-hour basis, the nursing supervision need not be. Care is usually given by auxiliary nursing personnel.

The care of the resident is to be carried out under the supervision of a graduate nurse as directed by a physician. A heavy concentration of graduate nurses in such an institution is not required because the need is primarily for personal services rather than

skilled nursing; however, general supervision by a registered nurse or registered psychiatric nurse is necessary.

Physical Status: Residents in this category either show evidence of aging changes combined with chronic disease, or regardless of their age, need assistance because of the advanced stage of their chronic illness (for example, arthritis, multiple sclerosis, or Parkinson's disease).

Emotional and Mental Status: This level of care will include residents suffering from varying degrees of mental deterioration resulting from senility, mental retardation, or psychiatric disorders but will exclude residents having characteristics of serious mental or emotional problems who might be harmful to themselves, harmful or threatening to others, or destructive of property. The resident may require close supervision because of restlessness or a tendency to wander occasionally.

Mobility: Ambulant, semi-ambulant, confined to a wheel chair, chair-fast, or bed-fast.

Meals Required: Special diets and tray services are common; residents will require varying degrees of assistance with eating. However, this level of care will exclude residents with conditions necessitating the taking of nutrition requirements other than by mouth (for example, nasal gastric tube feeding, intravenous, etc.) or those with physical difficulty in swallowing who are in danger of food or drink entering the air passages.

Health Care Supervision Required: The resident is fully or partly dependent in regard to self care. He may also require professional nursing but only as an adjunct to personal care. This level of care would include assistance with bathing, grooming,

eating, and dressing, administration of drugs, care of incontinent persons, application of sterile dressings and other sterile procedures (e.g. catheter care and injections other than intravenous) and simple exercises, but would not include such procedures as intravenous and oxygen therapy on a continuous basis. In most cases residents will require the administration of prescribed medication and periodic medical or psychiatric reviews. Residents may require simple rehabilitation measures designed to reactivate them or maintain the highest possible level of function.

Time: A resident at this level will require an average of two hours a day of personal and basic nursing care.

5. Limited Personal Care

This level of care is for residents who are slowing down in physical and/or mental faculties and therefore require supervision and some assistance with activities of daily living.

6. Supervisory Care

This level of care is for residents who need room, board and laundry service and who, because of frailty due to normal aging or minor physical or mental disability, require some supervision in the activities of daily living.

B. HOSPITAL AMBULATORY SERVICES

1. Emergency Services

There are really two types of case involved in this classification. First, there are the true emergencies, either traumatic or involving the sudden onset of acute episodic illness, which justify the seeking of immediate medical attention by attendance at an emergency department. Second, there are patients who visit emergency department for medical attention

of a sub-acute type, and for which the advice of a family physician would normally be sought.

Generally, this second type of patient comprises individuals who have no regular physician, and in large urban areas with a mobile population and a declining family physician population ratio, such visits are continuing to increase.

Both types of case are essentially non-referred: that is, it is the patient himself or his family who makes the decision to attend the emergency department.

2. Ambulatory Special Services

These are virtually all referred patients from physicians on the staff of a hospital. The development of a high order of services in this category may help to reduce inpatient requirements by allowing a physician to select the appropriate type of facility-support without reference to whether the service is insured or non-insured, provided ambulatory services are convenient for patient and physician, and are of high quality. This includes surgical procedures requiring general anaesthetic but not requiring inpatient admission.

3. Organized Outpatient Services

The role of these is in transition. Historically, organized outpatient clinics have fulfilled two key roles - viz.: the delivery of office-type medical care to the indigent population, and the provision of ambulatory care teaching to resident house-staff. While the prevalence of medical care insurance may well lessen demand for out-patient clinics in the traditional sense, there is a move towards establishment of multidisciplinary clinics which provide a dimension not available on an individual-physician basis.

4. Service by Geographical Full-time Physicians

At least in large teaching hospitals, it is increasingly common for University Teaching Staff to be designated as geographic full-time staff at a given hospital. This means that the physician is devoting essentially full-time to University directed activities but that some consulting work on teaching patients is required. The question arises as to what extent office visits to geographic full-time physicians will provide teaching in ambulatory care in lieu of organized O.P.D. visits.

5. Out-Patient Diagnostic Services

This category includes such services as radiology, laboratory, radioisotopes, cytology services, and E.E.G.

6. Organized Day Care/Night Care Programs

Comprehensive programs of therapy or instruction for a patient requiring his attendance for a period of several hours. Services lending themselves to this type of program are: Assessment and Rehabilitation, Medicine (e.g. diabetic clinic); Psychiatry; Geriatrics.

7. Well-Patient Clinic

Clinics for early detection, diagnosis and treatment of disease primarily for preventive purposes, e.g., The Herzl Health Centre in Montreal.

C. RELATED FACILITIES AND SERVICES

1. Home Care

Extension of health care and related services to patients in their homes through an organized and coordinated program. The patient is under the therapeutic control of a physician.

2. Hostels

These are primarily for patients whose home is distant from the hospital. It is for those who require daily supervision by a physician or close proximity to specialized diagnostic or treatment services.

3. Senior Citizens' Housing

For those persons who are semi-dependent and are capable of living in their own home but may occasionally need some help with shopping, meal preparation, etc.

4. Transportation

Ambulance service for transportation of patients to hospital in emergencies and for transfer of inpatients between facilities; bus or other appropriate service for transportation of patients from home or hostels for outpatient diagnostic services, day care programs, etc.

APPENDIX 2

Table I

Total Patient Day Rates, per 1,000 population,
(incl. T.B., Mental, etc.)
By Province, All Hospitals and
Homes for Special Care, 1965

	<u>Canada</u>	<u>Nfld.</u>	<u>N.S.</u>	<u>P.E.I.</u>	<u>N.B.</u>
Rates	4609	2796	3862	4527	4308
Rank		10	9	6	7

	<u>Que.</u>	<u>Ont.</u>	<u>Man.</u>	<u>Sask.</u>	<u>Alta.</u>	<u>B.C.</u>
Rates	4241	4754	4982	5176	5424	5010
Rank	8	5	4	2	1	3

One of the major components contributing to the wide provincial variations is the volume of care provided to those 45 years and over. In Table II it is seen that the patient day rates for the 45 year + group in General and Chronic Hospitals combined are lowest in the Atlantic provinces and highest in the West, the one exception being British Columbia.

Table II

Age-Specific Patient Day Rates, per 1,000 population,
By Province for those 45 Years and Over in
General Hospitals and Chronic and Ex-
tended Care Hospitals, 1965

	<u>Canada</u>	<u>Nfld.</u>	<u>N.S.</u>	<u>P.E.I.</u>	<u>N.B.</u>
Rates	4116	2471	3190	3128	3625
Rank		10	7	8	6

	<u>Que.</u>	<u>Ont.</u>	<u>Man.</u>	<u>Sask.</u>	<u>Alta.</u>	<u>B.C.</u>
Rates	4040	4388	4204	4964	5221	3021
Rank	5	3	4	2	1	9

The low rates for hospitals in the Atlantic Provinces are not compensated for by high rates in alternate institutional facilities, that is, Homes for Special Care as shown in Table III. Here it is seen that, again, there is a low volume of care provided for those 65 and over in the Atlantic Region. Note also that the relatively low rate in B.C. for those 45 and over in hospitals is more than compensated for by the very high rate in homes for special care. Thus, in general, there is a close correlation between overall institutional utilization and the volume of care provided for older persons.

Table III

Age-Specific Patient Day Rates, per 1,000 population,
By Province for Homes for Special Care,
Age 65, 1965

	<u>Canada</u>	<u>Nfld.</u>	<u>N.S.</u>	<u>P.E.I.</u>	<u>N.B.</u>	
Rates	16,034	8,001	7,483	14,858	12,793	
Rank		9	10	6	8	

	<u>Que.</u>	<u>Ont.</u>	<u>Man.</u>	<u>Sask.</u>	<u>Alta.</u>	<u>B.C.</u>
Rates	15,661	16,034	17,332	14,052	23,023	18,628
Rank	5	4	3	7	1	2

Tabular data extracted from research memorandum -
Research and Statistics Directorate,
Department of National Health and Welfare.

According to these data older persons are institutionalized to a far greater extent in the Western than in the Atlantic Region. However, the institutional care of this group contributes heavily to overall utilization and is generally prolonged so that any effort to raise the volume of care provided for the older population in the Atlantic Region to even the national average, let alone to the level in the Western Region,

would have serious financial implications. It would be most useful to have more recent data on institutional use to see if any significant changes have occurred. The volume of care provided in facilities listed as Homes for Special Care is of particular interest. It is important to ensure that all in-residence care units below hospital level are included in this category.

The Task Force members surmise that the differences shown in the tables may well reflect regional patterns of utilization which pre-dated the introduction of hospital care plans.

APPENDIX 3

SUMMARY OF APPROACHES TO DETERMINATION OF BED NEED

Sources:

- (1) Pierce Garth A.H. Bed Need Determination in Canada. Thesis for Diploma in Hospital Administration, University of Toronto, July 1967
- (2) Communication from provinces, 1969

ONTARIO

1. Acute
Try to fit intra-provincial allocations into a total of 5 beds per 1000 total population. Criteria are based on 1550 days per 1000 at 85% occupancy. Assign 80% or 4.00 beds per 1000 to local hospitals (usually less than 100 beds), an additional 10% or .50 bed per 1000 to district hospitals (usually from 100 - 500 beds), and .50 bed to regional hospitals (except in the north, these are or will be University Teaching Centres). Beds are distributed to allow for age grouping differences.
2. Assessment & Rehabilitation
Add .25 beds per 1000 of total population for special rehabilitation.
3. Acute Psychiatry
Add .40 beds per 1000 of total population or .60 beds per 1000 of population 15 years of age and over. No special allowance for child psychiatry.

4. Extended Care
(Chronic Care)

1.00 bed per 1000 of total population distributed on basis of 12 beds per 1000 of population 65 years and over.

N.B. Variations in ratios may well be more of a reflection of differences in classifying levels of care than in basic differences in estimation of need.

SASKATCHEWAN

1. Acute

Bed standard based on 7 beds per 1000 total population or 5.6 occupied beds per 1000 (2044 days per 1000 per year). Calculate population served by hospital. Adjust for the difference in age and sex composition of the hospital's population and that of the province. Adjust for Indian population which has higher admission rates and length of stay. Adjust for average length of stay for size of hospital compared with length of stay for all hospitals. The result is standardized or adjusted population which is then applied to provincial allowed standard of 5.60 occupied beds per 1000. Result multiplied by 365 days to give "allowed" patient days per year.

2. Assessment and
Rehabilitation

See "Extended Care".

3. Acute
Psychiatry

Psychiatric beds in general hospital are included in acute standard. Future total need is estimated at .50 bed per 1000. This does not

allow for psychogeriatric patients who cannot be accommodated in homes for special care. Day care and out-patient services considered to reduce significantly the number of inpatient admissions. Present psychiatric beds number 1400 of which about 1000 are for long term patients admitted before development of community programs. As these die or are rehabilitated beds will not be replaced.

4. Extended Care
(Chronic Care)
or Levels IV
and V

.50 bed per 1000 recommended for assessment and rehabilitation and chronic care by 1963 Survey Committee. New proposed ratio of .70 bed per 1000 is being examined.

5. Levels Below
Extended or
Chronic Care

5.00 Beds per 1000 recommended by 1963 Survey Committee to be combined with expanded community services. In absence of community services the standard is felt to be inadequate.

BRITISH COLUMBIA

The School District is the basic statistical unit. The Province is divided into Regional Hospital Districts composed of School Districts.

.. Acute

No specific target in beds per 1000. Estimate present and future total population and proportions by age group: 0-14, 15-69, 70 and over. Separate number of females aged 15-44 for

maternity calculation. Determine existing utilization by age groups. Make separate calculation for Indians where these exceed 10% of population served. Determine a net ratio of population served to area population (using figures on outflow of patients from area and inflow to the area). Compare age-group utilization rates with other areas and the provincial average for type of district. Apply utilization rate or adjusted utilization rate to future population. Determine occupied beds by service. Determine total beds by service using occupancy rates by size of service.

2. Assessment and
Rehabilitation

Beds calculated at .50 bed per 1000 total population. Provision of non-specialized assessment and rehabilitation beds was felt to reduce acute medical and surgical beds almost by same amount. Was felt to need refining.

3. Acute
Psychiatry

Adult care need estimated at .50 bed per 1000 of total population. Where no special psychiatric unit has existed, a reduction is made in general acute beds if it is shown that these have been used in the past for psychiatric purposes.

4. Extended Care Based on 20 beds per 1000 of population 65 years of age and over.

5. Levels Below Extended or Chronic Care For what would be approximately level 4 in this report roughly estimated at 20 beds per 1000 of population 65 years of age and over.

MANITOBA

1. Acute Use utilization experience projected to future. Analyze days of care by hospital and referral pattern. Apply to projected population. Apply "desirable" occupancy by service. Modify calculations by subjective evaluation of patterns of medical practice; stability of medical services; economy of community.

2. Assessment and Rehabilitation Have one specialized short-term rehabilitation hospital. See Extended Treatment below.

3. Psychiatry Not stated.

4. Extended Treatment This group includes rehabilitation and treatment on long term basis. Standard 13.1 beds per 1000 (of population 65 years of age and over).

NOVA SCOTIA

1. Acute

Target 6.0 beds per 1000 total population. Estimate population served by a hospital. Adjust for age distribution. Adjust for average length of stay of hospital in question compared with average for all hospitals. Adjust for other factors such as isolation.

2. Assessment and Rehabilitation

Target.1.0 bed per 1000 for "convalescent, rehabilitation and chronic care".

APPENDIX 4

Notes on a Study of Waiting Lists

B.C. Hospital Insurance Service

Research Division

Report unpublished as at June 6, 1969

The study reviewed hospital waiting lists in British Columbia and examined in detail the lists of several hospitals. Waiting list patients are essentially "elective". It was found that as population grows and demand increases, beds are used more and more for emergency and urgent cases and the waiting list increases exponentially.

A mathematical model was constructed which permits calculation of the effects of such variables as population growth and additions of beds to the system at any future time.

The model was tested against past experience in specific hospitals. The theoretical waiting list approximated the actual results.

Analysis of an adequately maintained waiting list should be a useful aid in assessing requirements.

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3 Task Force Reports on the Cost of Health Services in Canada Health Services

Delivery of Medical Care
Price of Medical Care
Public Health

Task Force Reports on the Cost of Health Services in Canada

Published under the authority of
The Honourable John Munro,
Minister of National Health and Welfare

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Summary

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Utilization

Operational Efficiency

Salaries and Wages

Beds and Facilities

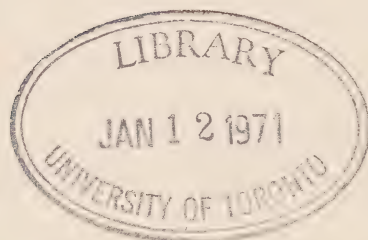
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Health Services

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TASK FORCE ON METHODS OF DELIVERY
OF MEDICAL CARE

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PART I - INTRODUCTION

General Considerations

The general task was to consider ways and means by which the cost of delivery of health services "may be maintained at a reasonable level without negative effects on the quality of care", and the modus operandi was to have committees ("Task Forces") "utilize existing information and knowledge to develop recommendations, guides and standards which could be applied as practical, logical and definitive methods of maintaining costs at a reasonable level with special emphasis on practical, positive and short-term recommendations and results".

Specifically this Task Force was to apply these terms of reference to "Methods of Delivery of Medical Care". In this context "medical", as distinct from "health" services, was taken to indicate physicians' services primarily, with a consequent focus upon personal medical care and particularly that required during episodes of ill health.

In Canada delivery of medical care traditionally has been a personalized service individually provided by the private physician or under his supervision. Hence there is little statistically verifiable data on the merits of the methods per se or vis-à-vis any alternatives. This paucity of data on delivery methods contrasts with the relative abundance in medical scientific areas and underlines a distortion of social values which directs large sums of money to developing new diagnostic and treatment techniques but little to improving methods for making them available to the people who may need them.

This disparity was stressed by R.H. Kampmeier in the 1968 Presidential Address to the American College of Physicians, "... therein lies the paradox - the promise of health or cure and the inability to provide it". Yet "medicine, like other professions has an obligation both to serve clients and...define issues and seek out and illuminate social as well as scientific medical problems".¹

"The true role of the physician remains constant - to promote health to apply other knowledge to the problems of his patients and to alleviate suffering. This role can be discharged best with ethical rules, tested and tried by time, of a self-governing profession, with a strong social conscience and the capacity to adjust to change."²

General Objectives

The designated objective of moderating the rate of rise in costs of delivery of medical care in Canada cannot be resolved by mere selection of promising components or systems from other parts of the world. A nation may, with advantage, develop a system appropriate to its level of socioeconomic development which is unique and relatively efficient for that nation but inappropriate to Canada.

Since objectives do relate in some degree at least to ideals, it may be pertinent to conceptualize the situation which would obtain under ideal conditions of medical care:

- (a) no person would do anything likely to injure his own health;
- (b) each person would be protected by regulation, inspection and the force of law from having his health damaged by the actions of others;

- (c) each person would receive optimum medical diagnostic and treatment services when indisposed and these would be available without regard for his socio-economic status or locality;
- (d) the physical and social environment for work, for learning and for leisure activities would be such as to promote satisfying productivity, emotional stability and enjoyment.

The ideal medical care delivery system for a country could be said to be that which provides the most efficient translation of current medical knowledge into effective medical care and makes it equitably available to all citizens without undue strain on the economy.

Some Reservations and Problems

While this principle of equitable distribution of first quality medical services is accepted, its realization is recognized as a long-term aim.

"So we reach the sad but accurate conclusion that not everyone can get top-quality medical care. That is a brutal but plain fact."³

Since the demand for personal medical care has been increasing out of proportion to the population increase with no comparable increase in the ratio of practising physicians to patients foreseeable in decades the prospect is that more medical services must be delivered by a relatively constant number of physicians while maintaining costs at reasonable levels and a quality of service comparable to that found in other advanced nations.

It follows that key requirements for the future include increased operational efficiency on the part of persons and facilities concerned with the

delivery of medical care, together with ongoing programs for testing the validity, efficiency and effectiveness of various approaches with a view to their improvement or replacement.

However, there are practical problems deriving from the fact that such studies not only involve a field in rapid transition, but one in which there are only limited data sufficiently sound to form the basis of proposals for major innovations likely to be successful in terms of cost-benefits and feasible of implementation in the near future.

Another problem area concerns lack of parameters. Failure to develop more useful cost-benefit data in relation to personal medical services derives partially from inadequate records and follow-up and partially also due to lack of so basic a parameter as a defined product which would permit measuring the output of the system. Such output would be measurable presumably in terms of improved health attributable to better medical services rather than to better food, sanitation, housing or social environment.⁴

At a time when serious infectious diseases were the major health problems of society, simple mortality rates afforded valid indices of effectiveness of treatment or prevention. Today, however, when lesser or chronic diseases are deemed treatable and when such activities as elective surgery or diagnostic screening require assessment for effectiveness, more sensitive indicators are required to measure the improvement in health or in the quality of life which results from particular treatments or tests. With such indices, there will be a means whereby the outcome of different medical care delivery systems can be compared and large expenditures justified.

"Effectiveness" is obviously not measurable in terms of dollars spent, office visits made, hospital bed days, tests done or drugs dispensed, but would require to be expressed in some terms related to units of medical problems resolved or of health restored or preserved. Some studies^{4, 5} have measured effectiveness in terms of days per month of "activity limitation" and "bed disability" but these morbidity indices are susceptible to subjective bias deriving from personality, motivation, cultural patterns and economic incentives.

"Efficiency" carries its generic connotation of obtaining maximal return for costs incurred and efficiency in the context of delivery of medical care should be measurable in terms of cost-effectiveness if and when effectiveness can be quantitated.

"Costs", in turn, must include consideration of primary costs, i.e., the fees and salaries for medical services, tests, facilities and treatment, as well as the secondary costs related to loss of income and productivity and other social and economic dislocations resulting from an illness.

Needs for Medical Care

In planning toward control of costs and improvement in efficiency in delivery of medical services three general approaches are available:

- (a) provide needed services more efficiently;
- (b) stop activities for which there is little or no justification in terms of true need;
- (c) never start activities for which there is dubious need or little likelihood of achieving desirable cost-benefit ratios.

All of these approaches are patently contingent upon defining and measuring true needs for medical care in Canada both for the present and the foreseeable

future. Only then can the effectiveness of medical care delivery be measured and appropriate provision made to satisfy unmet needs and to pointedly ignore spurious needs. Only then will efficiency become both measurable and meaningful, for there is no virtue in meeting non-needs even with a delivery system of surpassing efficiency.

It became apparent that for semantic as well as for socioeconomic reasons, needs required to be defined and elaborated upon to some extent:

A "true need" for medical care relates to the requirement for attention for a condition for which there is some effective treatment.

A "perceived need" relates to the impression by a patient or another person that sub-optimal health exists at the time regardless of the existence of effective treatment.

What might be termed "provoked needs" or "stimulated needs" are those resulting from publicity sponsored by health agencies or organizations devoted to specific diseases. De-emphasizing this approach in many instances could reduce unjustified anxiety and consequent demands for medical services and do so without disadvantage to the general health.

"Unmet needs" may exist even when services are available. Some unmet needs which are unperceived may require systematic screening for their discovery, although this approach is only considered justifiable when searching for diseases of significance which are communicable or are prevalent in the population and which can be ameliorated if identified at an early stage.

"The current needs for medical care in Canada are unknown"⁶-but would be tremendous in terms of the failure of most citizens to attain to the World Health Organization's definition of health as being optimal physical, mental and social well-being. "Needs" therefore depend on definitions and norms, which will vary with geography and social situations, so that their incidence is susceptible to manipulation by modifying the definitions, norms or screening techniques on which the chosen index is based.

The difficulty, but the importance, of separating out true "needs" for medical services from "demands", and of publicizing the "needs" is obvious, because "one of the lessons of history is that the demands of the public are eventually inexorable".⁷

There is ample evidence that the demands have risen from a variety of influences including insurance, affluence and better education, especially health education by the mass media, all of which contribute to higher expectations on the part of the public and more frequent use of medical services.^{8, 9}

Education of the public could improve discrimination of true needs among perceived needs so that demand would conform more closely to true needs. Efforts to provide for all true needs could be assisted further by better dissemination of information to the public regarding the availability and correct utilization of health services.

The medical profession has a vital role to play in this regard. Furthermore, health propaganda which creates demands on the health care system should not outrun the ability of the system to provide the extra services.

"Demands" for medical services are more readily determined qualitatively and quantitatively than are "needs", e.g., by reference to the number and types of services for which claims are made under a broad-coverage first-dollar medical insurance plan.

In general, the overall demand per capita for medical services has been increasing at a rate of about 5% per year¹⁰ and, barring discoveries capable of increasing or decreasing demands substantially, this trend will likely continue for 5 to 10 years into the future. While part of this increase in demand is patient-generated - for reasons mentioned earlier - part of it may be related to altered standards and changed patterns of practice.

The Possibilities for Modifying Costs

Since delivery of medical services usually involves a one-doctor-to-one-patient contact, as a result of which costs are generated, there are three broad possibilities for eliminating costs: first, reduce the number of episodes of illness requiring medical care; second, reduce the number of contacts or inter-actions between the patient and medical personnel during any given illness; and third, moderate the cost per contact.

These three broad theoretical possibilities for limiting costs may be further subdivided as follows:

- (A) Possibilities for reducing the number of episodes of illness for which medical services are demanded.
 - (a) Raise the "symptom threshold" at which persons consider themselves ill.
 - (b) Permit minor indispositions to resolve themselves.
 - (c) Provide readily available advice, screening and triage by trained telephone operators in each area

(together with dissemination of information to the public regarding availability and correct utilization of these services).

(d) Promote improved physical and mental health of the public by:

- (i) optimal preventive measures - immunizations, screening for disease, prevention of accidents (industrial, home, traffic), reduction of toxic exposures (alcohol, tobacco, drug abuse, industrial wastes and other environmental pollutants);
- (ii) more prudent mass-media reporting and advertising, as well as publicity by disease-oriented organizations and education by schools and health agencies with a view to fostering a sense of responsibility rather than anxiety about personal health;
- (iii) minimizing iatrogenic illness - whether resulting from medication, non-selective use of tests, disquieting or unreassuring advice or non-indicated use of "rest";
- (iv) providing health-promoting environments for living and working which involves not only buildings but parks and preserves which facilitate sports participation, recreation and "quiet enjoyment" as counterfoils to the deleterious effects upon physical and mental health of urban noise, traffic and crowding.¹¹

(B) Possibilities for reducing the number or complexity of doctor-patient contacts for a given episode of illness.

(a) Minimize unjustified demands for services through durable incentives to doctor and patient to implement contact only if indicated.

- (b) Reduce the mean complexity of treatments undertaken by recognizing as suitable for full treatment only those cases susceptible of cure or major palliation. This involves the understanding that death is at times a satisfactory outcome for certain illnesses and that there is no moral justification for pre-empting treatment resources in efforts toward undue extension of existence without regard to its quality.
- (c) Modify the orientation, training and utilization of primary contact physicians to increase their capability to manage a greater number and variety of clinical situations with greater efficiency. This applies not only to dispatch in the resolving of problems but also the prudent use of drugs, tests, consultations, hospitalization, return visits, etc.
- (d) Require written justification on the clinical record or on a requisition for the ordering of consultations or for elaborate tests or treatments.
- (C) Possibilities for modifying the costs of individual doctor-patient contacts.
 - (a) Improve efficiency and effectiveness of such interactions through optimal application of the clinical skills of the physician vis-à-vis diagnostic procedures, treatment and support measures.
 - (b) Utilize the assistance of allied health personnel as support or as primary contact persons whenever the mix of presenting problems makes this feasible and efficient.
 - (c) Maximize the physical efficiency of all aspects of the environment in which the contact occurs.

The foregoing possibilities embrace such a wide variety of topics (see listing on following pages) that only selected subjects can be given sufficient

consideration to permit developing proposals or recommendations within the limited working time (3½ months) of the committee. Many of the other topics are deserving of more complete study because of inherent possibilities for improving the health care delivery system.

LISTING OF TOPICS RELATING TO DELIVERY
OF MEDICAL CARE

- 1.0 Medical Manpower, Supply and Conservation (new medical schools; making operational and expanding present facilities; in dire emergency, "freezing" medical manpower).
- 1.1 Distribution of Physicians (geographical considerations; types) (See 11.0).
- 1.2 Availability of Physicians' Services (See 2.0, 1.1, 5.1, 9.1).
- 1.3 Allied Health Personnel (Practitioner associate; nurse; technologist; social worker; physiotherapist; et cetera).
- 1.4 Professional Organization of Practice (solo; association; group) related 1.1, 1.2 and 2.0).
- 1.5 Definition and quantitation of unmet perceived and unmet unperceived needs for medical services (See 11.0 and 11.1) (This is a major study and should probably have a task force of its own).
- 2.0 Emergency and Urgent Care Services (organization; triage; ancillary services) (See 1.2, 1.3 and 1.4).
- 2.1 Triage and Same-Day Service.
- 3.0 Survey and Diagnostic Screening (mass, multiphasic; periodic health examination - episodic, annual patient initiated, symptom initiated).
- 3.1 Mass delivery of certain services (immunization, et cetera) (See 3.0).

- 4.0 Health Planning Councils (district; regional; provincial; national) (See 2.0, 2.1, 3.0 and 3.1).
- 4.1 Regional Co-ordination of Medical Services (institutions; medical staff; emergency) (See 2.0, 2.1, 3.0 and 3.1).
- 5.0 Physicians' working environment (office, home, hospital, other).
- 5.1 Design of Physicians' Workshops (office, operating room facilities; O.P.D. clinic, ward) (See 9.1).
- 5.2 Medical Audit Procedure (quality care, quantitative assessment).
- 5.3 Automation of Documentation (identity numbers; social service identification).
- 5.4 Information for Practising Physician (access community health services; national computer service) (See 10.0).
- 5.5 Administrative Constraints on what a physician does and where (Licensing authorities) (See 1.1, 1.3, 5.2).
- 6.0 Health Units (regional; special; mobile) (See 1.4, 1.5, 3.1, 4.0 and 4.1).
- 6.1 Distribution of Facility (geographical) (See 1.1, 1.3, 5.0 and 5.1).
- 6.2 Preventive Measures (physician role in; social worker; lay societies; motor safety legislation, etc.).
- 7.0 Committee on Delivery of Personal Medical Services. (See 1.1, 1.2, 1.3, 4.0, 4.1, 5.0, and 5.1).
- 7.1 Research and Development - Grants for Delivery and Systems of Medical Services.
- 8.0 Continuing Medical Education (See 5.5; continuing competence).

- 8.1 Continuing Education of Allied Health Personnel (competence; upgrading).
- 9.0 Medical Care in Hospital (physician generated costs; medical and allied staffing) (See 5.0 and 5.1).
- 9.1 Alternatives to Active and Rehabilitational Institution Medical Care (nursing home; home care; senior citizens).
- 10.0 Information for the Public and Government in respect to Utilization of Medical Services (over-servicing; over-demand) (See 5.4).
- 10.1 Utilization of Drugs (by physician; allied health personnel; public).
- 10.2 Utilization of Diagnostic Services (by physician; public; allied health personnel; overlap; over and under usage).
- 11.0 Minimal Acceptable Standards of Universally Available Care (metropolitan; urban; rural; emergency; frontier) (See 1.1, 1.5).
- 11.1 Demands for Medical Care in Relation to Need (true, unmet, perceived, unperceived) (See 1.5, 10.0, 10.1 and 10.2).
- 12.0 Clinical Research.
- 12.1 Clinical Teaching.

The more one studies this list of topics related to Delivery of Medical Care, the more one is forced to certain conclusions: there are large areas of overlapping interests; as one tries to inter-relate the areas of overlap one perceives new and continuing vistas of unsolved problems; the continuing reference is to words like "planning", "regionalization", "co-ordination"; all these and similar broad terms lead inevitably to the conclusion that the "super-bureau" of planners may be nearer than one thinks.

In co-ordinating and planning one develops the realization that delivery of medical care on such a basis could lead to a type of "civilian conscription" of the medical and allied professions, to say nothing of the public receiving the service.

Criteria for Acceptability of Proposals

In view of the obvious impossibility of considering and developing proposals relating to all of the foregoing subjects, certain criteria for acceptability of proposals were adopted:

- (a) They should have a reasonable prospect of promoting greater efficiency, effectiveness and validity of medical care activities in the foreseeable future.
- (b) They should enjoy a reasonable measure of public and professional acceptance.
- (c) They should not involve unwarranted documentation or administrative controls.
- (d) They should be capable of implementation without seriously disrupting existing serviceable patterns.
- (e) There should be a built-in provision for evaluating their efficiency and effectiveness.

SUMMARY

While the main problem areas in respect to delivery of medical care are of concern to all three sectors - the people, the government and the medical profession, for each the priorities differ, i.e., for the people the prime concern is the availability of good medical care when needed or desired; for government the immediate concern (the reason for this Task Force's activities) is that current and projected costs of medical care are disconcerting; while for many physicians the most pressing problem is that the time and effort required to satisfy patients' expectations for medical care

precludes the physicians' reasonable expectations for enjoyment of life in contemporary society.

However, there is one element common to all three viewpoints and that is a common desire for efficiency and effectiveness in the delivery of medical care. In this objective, medicine, nursing, other health disciplines and government find strong mutuality and it is here that their efforts should be joined in shaping the methods of delivery of medical care.

These efforts will only be fulfilled if the principles of controlling costs through increased efficiency, and increasing efficiency through research, and validating research through compilation of sound data are accepted.

It is for this reason that the task force considers the recommendations under Topics A and B are most important.

PART II - TOPICS

A - RESEARCH AND DEVELOPMENT IN DELIVERY OF PERSONAL MEDICAL SERVICES

While recognizing that the problem of immediate concern to the federal and provincial governments is the rising cost of health care, the task force is reluctant to propose solutions for certain problems related to the cost or effectiveness of medical services without more knowledge of the nature, importance, magnitude, distribution and, indeed, the very existence of some of these problems.

It is apparent to the members of the task force that more public funds must be spent on research now if the escalating costs of medical services are to be controlled without adverse effect on the quality of these services.

Recommendation 1

That a Committee on Personal Medical Services reporting and making recommendations to the regular conferences of the federal and provincial Ministers of Health through the Dominion Council of Health be established and continue for at least five years to carry out the following functions:

- (a) continuing evaluation of the delivery of personal medical services and the recommending of indicated research and changes in the medical care delivery system or systems;
- (b) convening of an annual working conference on the delivery of personal medical care with participation by invited experts to exchange information, to discuss methods of research and to evaluate innovations, thereby providing a channel of communication between

individual research workers across Canada and the Committee on Personal Medical Services;

- (c) evaluation of systems of delivery of medical care in other countries which might be relevant to the Canadian situation;
- (d) receiving and evaluating progress reports and final reports of all research activities related to the delivery of personal medical services which have been carried out by, or with financial support from, the federal government, and
- (e) the submission of reports of the activities of the Committee on Personal Medical Services at least twice yearly.

Recommendation 2

That the Committee on Personal Medical Services be composed of one member selected from a slate of nominees suggested by each of the following bodies:

- (a) the Department of National Health and Welfare,
- (b) a provincial Department of Health,
- (c) the Canadian Medical Association,
- (d) the Federation of Provincial Medical Licensing Authorities of Canada,
- (e) the Royal College of Physicians and Surgeons of Canada,
- (f) the College of Family Physicians of Canada, and
- (g) the Association of Canadian Medical Colleges.

In addition, there should be a representative from the field of Public Health and a French-speaking representative if not included already, and,

in accordance with Recommendation 5,
the Chairman of the Research Review
Section.

Recommendation 3

That an adequate Secretariat be established within the Department of National Health and Welfare to serve the Committee on Personal Medical Services.

Recommendation 4

That liaison be established between the Research Development section of the Department of National Health and Welfare and the Secretariat of the Committee on Personal Medical Services.

Recommendation 5

That the Committee on Personal Medical Services be authorized to create a Research Review Section to serve the Committee by advising on the technical merits of research proposals related to methods of delivery of medical care which are submitted for federal financial support. The Chairman of the Research Review Section should be appointed by the Committee on Personal Medical Services and be an ex-officio member of the Committee, if not a member already.

Recommendation 6

That federal health grant budgets be adjusted to actively encourage the development of research in methods of delivery of medical services.

These proposals are regarded as being of high priority and capable of being acted upon in the short term.

B - GRANT SUPPORT FOR RESEARCH AND DEVELOPMENT
IN DELIVERY OF PERSONAL MEDICAL SERVICES

Improvement in the cost-efficiency and effectiveness of medical services depends increasingly upon special research and development efforts, usually of a multidisciplinary nature, addressed to exceedingly complex problems. Examples of such research now needed in Canada include studies in economic analysis, evaluation of present delivery systems, design, organization and utilization of new health services and development of special delivery systems to disadvantaged groups.

Assistance from the Department of National Health and Welfare for research and studies of this nature is available from the Public Health Research Grant and the National Health Grant.

The Public Health Research Grant includes support for hospital- and community-based health care studies, operational or administrative research and studies on the training and utilization of health manpower resources.¹ This program, however, has not always been satisfactory to either Canadian investigators or the Preventive Medicine Assessment Group of the Medical Research Council for a number of administrative, fiscal and policy reasons.²

The new National Health Grant is to provide support for research, study, demonstration, training projects, etc., designed to stimulate and develop improved methods for providing health services related to areas of national significance.

Nevertheless, even with these two programs of federal research support, not all the research requirements in this field will be met without further elaboration of the nature of the grants, the co-ordination of the two programs and the review process involved.

Furthermore the conditions under which grants may be awarded or the purposes for which they may be applied are not always understood by research workers.

Recommendation 7

That the federal health grant structure be designed to co-ordinate the Public Health Research Grant and the National Health Grant in the field of medical care delivery and that the means of access to these funds be clarified and publicized.

Recommendation 8

That grants related to the delivery of medical care be available on the following basis:

- (a) Research Grants: unsolicited research by Canadian investigators should continue to be funded subject to review of scientific merit and technical competence.
- (b) Exploratory Grants: unsolicited exploratory grants of up to \$10,000 per year for a minimum of two years should be available to encourage academic departments, health agencies, and hospitals to apply their resources and skills to the solution of health care problems.
- (c) Negotiated Research Contracts: solicited grants which permit the performance of extramural research pertinent to the needs of government.
- (d) Demonstration Grants: large grants primarily directed towards the demonstration of changes in the organization and delivery of medical services, and available to a province, institution or group.
- (e) Program Project Grants: large grants often referred to as "block" grants; their function is to enable an

institution to develop a series of related research projects. They should be made available to mature investigators who have a demonstrated capacity for sustained productivity or leadership in medical services research, and who have beneath them a group of project directors who are themselves capable of high quality research. Program Project Grants can stimulate co-ordinated research planning, the hiring of central staff, and the orderly development of research at specific institutions. These grants are a gamble that capable investigators, in centres with established interest in medical care research, will be productive in generating knowledge which can be applied to changing the organization and delivery of health services. For this reason, the basic criteria for Program Project Grants should be that the program,

- (i) must have an opportunity of effecting changes in the delivery of medical care to population groups;
 - (ii) must be under the guidance of a senior investigator of proven worth;
 - (iii) must have a focus, such as a single major problem or operational area in health services which will be the field for concerted, innovative research over a period of 5 years;
 - (iv) must demonstrate an orderly program of research across the period of support;
 - (v) must have a potential for training in health services research or administration.
- (f) Grants in support of Research Positions in Delivery of Personal Medical Services: financial support

for this type of research position should be made available to the Department of Community Medicine or its equivalent at each medical school.²

- (g) Training Grants for personnel in medical services research, teaching and delivery.

These recommendations should receive high priority consideration in the short term but probably cannot be implemented for at least a year or two.

C - EMERGENCY AND URGENT CALL SERVICES

There are in Canada annually millions of emergency and urgent situations in which the need for medical care is pressing. At the same time there are in most communities almost all of the resources, both human and material, which are necessary for the rendering of emergency and urgent medical services.

In spite of this, however, the most commonly voiced criticism of the medical care delivery system in Canada is the unavailability of medical help in the emergency or urgent situation. It is believed that what is lacking is a planned approach to the provision of these crucial services.

Organization - general

A regional approach to the organization of medical emergency services is needed to prevent gaps and poor co-ordination and the plan, as a whole, should be based on the concept of "progressive patient care", by verifying that each step in the patient's progress is anticipated so that personnel and equipment are available when necessary.

Major disasters represent one end of a spectrum of emergency situations and since the basis of a good disaster service is a good, regionally-planned, day-to-day emergency service, it is considered reasonable to direct some civil defence planning, financing and resources towards the organization of effective emergency services.

Non-emergency "urgent" calls occupy the other end of the spectrum and must be separated from true emergencies if the latter are to be managed with maximum salvage of life and function.

Organization - Urban/Rural/Remote Areas

Optimal provisions for personal medical emergency services will vary considerably between regions and between rural or remote areas as compared with urban or metropolitan areas.

Emergencies in rural areas are generally quite well serviced because the population is static and well aware of the location and type of assistance which is available. A patient is usually moved promptly to the nearest hospital or physician's office.

In the rural locality, the physician himself is likely to be the prime organizer and co-ordinator. He should know or determine the availability of other personnel such as nurses (whether active or inactive) and trained first-aid workers; he should familiarize himself with the communications facilities available in his area in order to use police and amateur radio as well as commercial facilities effectively; he should survey, inventory and organize treatment facilities as well as the means for transporting emergency cases.

These facilities could include ambulances, aircraft, boats and snowmobiles, and possibly the fitting-out of jeeps or station wagons as ambulances for use in emergencies.

In small urban areas, problems of time, communications and optimal use of facilities may be compounded by increased numbers of emergencies, but there are compensations in the greater number of physicians and other trained personnel and the choice of facilities available.

Ambulance services and communications are often better and individual emergencies are usually well looked after in this setting.

In large urban and metropolitan areas, the very multiplicity of available services may militate against

prompt service in emergencies. There may be more than one police force, a variety of ambulance services and a choice of several hospitals as well as an increased potential for confusion in respect to the appropriate use of communications and the co-ordination of facilities.

Hence, a prime requisite is to simplify the procedures to be followed in emergencies and to co-ordinate the available resources. This may best be achieved by an emergency organization which employs a single emergency telephone number for the area and which co-ordinates communications and transport to move casualties to the most appropriate treatment facility, taking into account the nature of the problem and the location. Local circumstances will dictate whether this is a hospital or other facility.

Some patients, in large urban areas particularly often are unable to contact their physician in an emergency -- if indeed they have one. Others make little or no attempt to contact their physician and even if successful in doing so, may be redirected to a hospital.

Emergency and Urgent Services

Whenever the facilities for handling a broad range of urgent cases may become over-taxed, as often occurs in large urban centres, it becomes important, not only in terms of logistics but of saving lives, to undertake to separate the true emergencies from the non-emergency urgent calls.

Such separation may be made on the basis of specified criteria or definitions. However, the differences between emergencies and non-emergency urgent calls are easier to list than to define and there is some overlapping.

"Emergencies" - include instances of poisoning and over-dose, assaults, attempted suicide, collapse, trauma and burns (except minor) and serious and acute

medical, psychiatric, gynaecological, paediatric and other illnesses. Because attributes of emergencies include suddenness of onset and the need for prompt care, the patient may have no choice about where or from whom he receives care. Many require ambulance or equivalent transport and hospital-type facilities for their treatment.

"Urgent calls" - in general do not include the conditions listed above but rather a milder range of medical conditions which, in the patient's opinion at least, require assessment or advice within minutes to hours and, in any event, within the same day. The patient's approach is characterized by insistence upon service and a sense of immediacy, yet the patient will usually exercise free choice of where he seeks help. Many such demands will originate as urgent telephone calls or as requests for immediate service from an emergency department or other ambulatory patient facility sometimes not organized to deal with them.

Basic Components for Delivery of Emergency Medical Services

- (a) Community organization -- In regional areas the responsible authority requires to be identified to ensure co-ordination, assessment and supervision of the total emergency medical care program. Representation on any supervisory council should include medical practitioners who have specialized in anaesthesiology, internal medicine, paediatrics, surgery and community medicine as well as representatives from the fire, police and ambulance services and appropriate voluntary agencies.
- (b) Communications -- An adequate emergency communications system includes means to originate calls for help and a co-ordinated facility to dispatch the appropriate equipment and personnel or to direct the caller to a treatment unit. There must be efficient

triage and co-ordination of ambulance, fire and police components when appropriate. There should be radio communication between ambulance services and a source of medical advice, for example, the receiving hospital.

In planning for a country-wide , single and unique telephone number (e.g. "911") for all emergency and urgent calls, a facility including specially trained switchboard operators should be available in busy areas to stream non-emergency urgent calls to the appropriate facilities and away from emergency treatment facilities.

- (c) Personnel -- Personnel adequately trained, and preferably licensed, must arrive rapidly on site prepared to provide necessary airway care, artificial ventilation and cardiovascular resuscitation as well as first aid for trauma. The general public, police, fire, as well as health professions could be trained further in their roles in emergencies.
- (d) Transportation -- The means of emergency transportation of patients has been described above in respect of urban, rural and remote areas. Since personnel require proven skills to move patients without harm, the driver's ability to drive and the attendant's competence in emergency care should be certified by licensing authority. In areas where calls are relatively few, the ambulance personnel could be based on a hospital where they would have other regular duties.
- (e) Emergency Facilities -- A rational descriptive categorization of community medical emergency facilities is important and might be as follows: -
 - (i) The first-aid facility is a small local unit, for example in the factory or neighbourhood, which does not have a physician present at all times.

- (ii) The emergency hospital is organized principally to deal with emergencies and is staffed around the clock by physicians but not by a complement of specialists.
- (iii) The major emergency hospital is staffed around the clock by teams of specialists available within minutes. Its organization conforms to the highest standards on a hospital-wide basis.

Patients with life-threatening conditions would usually be taken to a major emergency hospital which should be designated on a regional basis. Those requiring resuscitation en route would be taken in the first instance to the nearest hospital which has a physician on duty.

Basic Components for Delivery of Urgent Medical Services

- a) Public Education -- Urgent calls are best managed by the patient's personal physician. Public education by pamphlets, notices, news media and telephone books is needed to identify both the physician's and the patient's responsibilities in this respect. Directories or registers containing this information may also be specially useful in larger urban areas.
- b) Community Planning -- Organized efforts at urgent call coverage require support from primary care physicians (co-ordinated through the local medical society and district hospital staffs, if feasible), with support from other agencies, governmental or other.
- c) Physician Coverage on Telephone Call Service -- The responsibility for arranging coverage for telephone calls should rest with the physician. If the patient's own physician is not available, a telephone-available physician should have been designated and be on duty.

This may be organized by individual arrangements between physicians or by a rotation plan on a regional basis through the Academy of Medicine or District Medical Society or even through a hospital staff arrangement. Some aspects of this service may need public subsidy and could be organized in this case as an extension of the roster duties centered on a local emergency department.

The interest and involvement of medical societies is essential in improving coverage, communications and developing new or broader patterns of emergency and urgent care in the community.

- (d) Providing for Unscheduled Visits by Ambulatory Patients -- Part of the load of non-emergency, non-urgent cases handicapping present casualty-oriented emergency departments can be reduced by convincing the public that better care for this type of problem is available elsewhere -- in private offices, clinics or out-patient departments.

Patients must be discouraged from coming to emergency departments simply as a matter of personal convenience. If there is need in some areas to supply personnel for out-patient clinics on a continuous basis, or if physicians cannot be prevented from directing their own non-emergency patients to the emergency department, staff and space arrangements should always be such that the handling of true emergencies is not hampered.

Public Funding of Medical Emergency and Urgent Call Services.

The following are considered likely to need some government support on occasion:

- (a) Educational facilities for support personnel.
- (b) Special transport in remote areas.
- (c) Communications equipment.

- (d) Basic resuscitation and support equipment.
- (e) Special equipment in major emergency hospitals.
- (f) Regional rosters of telephone-alert physicians.
- (g) Information for patients, including appropriate methods of obtaining assistance.
- (h) Directories of personnel and facilities, and
- (i) Special triage facilities, out-patient or district offices, or out-patient clinics on a continuous basis in certain areas.

Recommendation 9

That the Canadian Medical Association be invited to define the desirable basic standards of emergency and urgent call services which should be available for all Canadians and make appropriate recommendations to the Dominion Council of Health.

Recommendation 10

That the Department of National Health and Welfare promote and sponsor research pertinent to advancing the quality of emergency and urgent call services and that information collected be disseminated to the provinces.¹

Recommendation 11

That provincial governments foster, in collaboration with the provincial divisions of the Canadian Medical Association, the development of the regional organization of emergency and urgent call services to fill any gaps in the overall system and supply the components required to ensure progressive patient care, including optimal use of Emergency Measures Organization services.

Recommendation 12

That there be adopted on a country-wide basis a unique telephone number (e.g., "911") for emergency and urgent calls.

Recommendation 13

That provincial governments, in consultation with appropriate organizations, work towards licensing standards for personnel manning ambulances, communications equipment, receiving centres and other emergency facilities.

Recommendation 14

That provincial governments, in consultation with appropriate organizations, develop acceptable standards for equipment and facilities for emergency communications, transportation, resuscitation, receiving and treating of emergency cases.

These proposals are regarded as being of high priority and capable of being initiated in the short term.

D - HEALTH SURVEILLANCE: SCREENING AND
PERIODIC HEALTH EXAMINATIONS

Introduction

Health Surveillance involves certain services and procedures aimed at the protection of individuals against disease. In the form of the annual medical examination or the "check-up" it is a component of medical practice whereby an individual attends a physician and requests an opinion about the state of his health.

In 1957, the U.S. Commission on Chronic Illness recommended that, "All persons should have a careful health examination including selected laboratory tests at appropriate intervals," and that "local health departments should foster efficient screening programs for large groups of the population."¹

Further, the American Public Health Association has recommended the extension and expansion of multiple screening programs as an essential and "integral part of a community health care system,"² while the National Commission on Community Health Services has commented: "Overburdened practitioners rarely schedule periodic health evaluation of their patients and follow-up if the evaluation is missed. The physician must accept (this) responsibility"³

The Royal Commission on Health Services recommended that the medical services benefit should incorporate "periodic physical examinations, but not including examinations for the purpose of marriage, insurance, or employment, or at the request of a third party."⁴

These recommendations would appear, at an intuitive level, to be capable of reducing the costs of medical care: it might appear axiomatic that success of intervention in the natural history of a disease should

be dependent upon the stage at which medical care was instituted.

In this situation it is presumed that the cost of surveillance and follow-up of possible disease would be less than the total cost of the disease to the community if intervention did not occur. However, neither physicians nor specialists in public health and preventive medicine have been unanimous in the acceptance of either this concept or the feasibility of community-wide detection programs.

If health surveillance was a means of utilizing physician manpower more efficiently and effectively, its general introduction and financing by the provincial medical insurance plans would be appropriate. For this reason, evidence regarding health surveillance was examined by the Task Force.

Definition of terms as used in this Report

"Mass Screening" refers to the administration of a test or tests to a population, generally from a total community, consisting largely of normal persons or persons without signs or symptoms, for the purpose of identifying the likely presence of a single disease state at an earlier stage in time than is customary in the usual medical care system. In this situation, effective treatment is the only justifiable goal unless the screening is done solely for research purposes to assess the prevalence or sources of disease.⁵

"Multiphasic Screening" refers to the simultaneous administration of a number of tests to a population, generally from a total community, consisting largely of normal persons or persons without signs or symptoms, for the purpose of identifying the presence of more than one disease state at an earlier stage in time than is customary in the usual medical care system. Again effective treatment is the only justifiable goal.

"Diagnostic Enquiry" refers to the examination of an individual and the battery of tests relevant to a suspected disease, which together comprise the medical work-up of a patient. Here the examination, procedures, and tests are employed to diagnose the presence of a disease state even in the absence of effective treatment.⁵

"Periodic Health Examination" refers to the examination of a population of apparently well persons at regularly stated intervals by a physician who determines what (if any) tests or special procedures are required to identify the likely presence of any disease state at an earlier stage in time than is customary in the usual medical care system. Again, effective treatment is the only justifiable goal.

Comments

- (a) It is noteworthy that over the past century many detection programs have been attempted with so little attention directed to the measurement of their cost-efficiency or effectiveness in improving the health of population groups. One noteworthy exception, chest x-ray and tuberculin skin test surveys, has proven of value in the control of pulmonary tuberculosis but here the efficacy of mass screening is enhanced by the fact that tuberculosis is communicable, and there is a well established follow-up program usually by the agency which conducts the survey. As yet there is no satisfactory evidence that mass x-ray screening is justified for the discovery of other treatable chest disease.⁶ Further, there is growing emphasis upon concentrating these surveys on "high risk" populations in order to reduce the cost per case.
- (b) Both physicians and the consumers of medical care expect that surveillance procedures will err on the side of caution: false positives are to be expected

and appropriate investigation will then be offered to determine that the patient is healthy.

- (c) At the same time there are serious observer and technical errors associated with health surveillance that far exceed the usual lay reliance on screening or the ability of a physician to certify that a person is healthy. The magnitude of this error has been reviewed by Garland⁷ and Fletcher.⁸
- (d) Recent reviews of Multiphasic and Mass Screening^{9, 10} and of periodic health examinations¹¹ have emphasized how deficient is the evidence of some ten examples of mass screening programs; for example, the Nuffield Provincial Hospitals Trust Working Group felt that only mass x-ray screening for tuberculosis and screening for haemolytic disease of the newborn met the test of critical expert scrutiny while screening for phenylketonuria in newborns (P.K.U.) and deafness in children came close to the standard of acceptance.^c

One of the commonest of all mass screening programs, screening for cervical cancer, has not as yet met the criteria for widespread adoption¹² though the mass program in the Province of British Columbia has gained international attention and will likely answer many of the objections within the next few years.

- (e) Unselective biochemical multiphasic screening tests are equally of unproven value at this time though chemical health screening is now technically feasible.¹³

There is a growing tendency to apply these to in-hospital patients through an automated laboratory system. This chemical screening may have certain disadvantages which include prolongation of patients' stay during the checking out of unexpected values,

whether these prove spurious, iatrogenic, physiologic or valid.

Even the on-going investigation of such findings incurs risk of obtaining further misleading data. Whether the multiphasic screening is practised in hospital or in the community, it will introduce a totally new "deductive approach" to clinical diagnosis which is not currently taught at medical school; the ultimate effect of this may be to generate young physicians whose practice is patterned in such a way as to be inherently expensive to deliver, and create a bias towards their settling in possibly already overcrowded urban areas in order to be close to the complex diagnostic facilities they have learned to depend upon.

- (f) The most extensive multiphasic screening program in operation is the Automated Multiphasic Screening Project of the Kaiser Permanente Medical Group in the Oakland/San Francisco Bay Area.¹⁴

In this program each month approximately 4000 patients can be screened over a two-hour period in some twenty diagnostic phases with 35 procedures or tests prior to their examination by a clinic physician who has the computer-prepared summary report at the time of the patient's first office visit.

An estimate of the unit cost performed by this group in 1965 indicated a direct unit cost per patient examination of \$16.00 and a total cost of \$22.50. The total cost of screening, including the physician examination and interpretation of historical, laboratory and other data, can be estimated to be about \$41.00 per patient.

It is significant to note that preliminary evaluation of the multiphasic screening project at this centre does not show any reduction of subsequent

morbidity in screenees, though it has been associated with a slight reduction in the use of physicians when these screenees are compared to a control group.

The evaluation, however, is continuing under the support of the U.S. Department of Health, Education and Welfare.

- (g) The pressure upon hospital administrators from advertising and promotional efforts associated with merchandising various devices for screening and for automatic handling machines must be balanced by objective information, recommendations and guidelines.
- (h) Approximately 8% of all visits to physicians in the U.S. are for "general checkups"¹⁵. However, many of the current health maintenance examination procedures stem from force of habit, popular usage and customer utility.¹⁶

The periodic health examination is only as successful as the community-wide education program, the extent of the physical examination, including endoscopy and pelvic examinations, and the multiphasic chemical screening program which accompanies the examination: the basic examination requires from 45 to 90 minutes of the physician's time while the patient must invest a minimum of 90 to 150 minutes.¹⁷

Despite considerable evidence that significant disease can be uncovered by these programs, demonstration that the course of an individual's disease can be changed by the early diagnosis is inconclusive.^{18, 19}

In the final analysis the periodic health examination must be evaluated by the demonstration of a reduced morbidity, disability or mortality. A most important feature of the periodic health examination

as it now exists is the personal health education which can follow such an examination.

- (i) A special form of the periodic health examination is used in industry and is directed to placement and executive health surveillances.

Here the cost may be balanced by the objectives of the company in establishing the program with its concomitant health education feature and the follow-up of abnormalities detected.

- (j) Periodic health examinations are well established for well children, school children and the elderly. Here the necessity for the physician to be involved is also being questioned²⁰ and more reliance is being placed upon screening procedures²¹ than upon the physical examination.

Such health surveillance programs therefore still require evaluation which should include proof of the preventive medicine maxim that the earlier the treatment the more effective the prevention.

Essential to any evaluation is a thorough knowledge of the natural history of the disease, the existence of an effective therapy and a diagnostic device capable of detecting the disease at an earlier stage than usual where the natural history will be altered by the introduction of effective therapy²².

- (k) The "diagnostic enquiry", an important and established component of our system, unlike the periodic health examination or the screening procedures, is initiated at the request of a patient who has symptoms or who wishes to be assured that he is not ill by having a "check-up".

It presumes that the follow-up of possible abnormalities will be done and that indicated counselling will be carried out. In many areas this "check-up"

is not covered by a prepaid medical care insurance plan but the recording of a "diagnosis" is required before a fee is paid.

Recommendation 15

That mass screening for disease in the undiagnosed state should not receive support from public funds unless such screening is:

- (a) selective as to methods used, considering their sensitivity, specificity, cost-efficiency and cost-effectiveness in terms of meaningful intervention in the natural history of disease,
- (b) directed to high risk groups, including those which do not customarily seek medical care, and
- (c) followed by a diagnosis with a minimum loss to follow-up of positive screenees.

Programs of mass screening must not be established solely in expectation of reducing the cost of medical care without careful consideration being given to possible secondary impact upon the entire medical care system.

Recommendation 16

That further evaluation of multiphasic screening should be undertaken to establish the validity of this approach in clinical practice, prior to any mass applications supported by public funds.

For research purposes there is an urgent need to determine the normal range of variables which are measured in mass and multiphasic screening programs, and the effect of such biological factors as time, age, sex, food intake, etc., and the natural history of abnormalities in terms of disease outcome.

Recommendation 17

That a "diagnostic enquiry" carried out by a physician, including indicated tests performed in adequate facilities, should be recognized as "medically required services" under the terms of the Medical Care Program; and, further, that a patient-requested "check-up" in the course of which no disease is found should be similarly recognized for payment, but not more often than once annually. Benefit schedules should recognize that not all complaints and investigations lead to a specific diagnosis. Unless the requirement to make a diagnosis of "disease" is removed no valid statistical information on the prevalence and frequency of such examinations will be obtained.

Recommendation 18

That multidisciplinary research be encouraged to delineate the combinations of laboratory or other diagnostic procedures which are effective and practical for health surveillance.

Recommendations 15 and 17 should be implemented in the short term and have a medium-high priority assigned to them. Recommendations 16 and 18 should have a high priority but solutions will be provided only in the intermediate and long term.

Considerations in Respect to Physician Manpower

Because the major problem in respect to medical manpower for many people is their inability to obtain the services of a medical adviser when required or demanded, it follows that priority should be given to ensuring adequate numbers and availability of first contact physicians and/or assistants.

It is pointed out that public perception of availability of physicians does not match actual availability and that it cannot be proven that there is an overall shortage of physicians rather than a maldistribution in terms of types and/or geographical location.

"Among those who have thought seriously about the problems of medical manpower the consensus favours increasing the supply of doctors to meet the increasing demand, but there are some dissenting voices."¹

Among the dissenting voices is that of E. Ginsberg;²

"No one questions the contention that the principal gains in health that the country has sustained have been due more to the rising standards of living and to advances in public health than to curative medicine. But this conclusion was not linked to discussions of future requirements for physicians.

"Again it was generally recognized that the control of cigarette smoking, of diet, of sexual promiscuity and of reckless driving offers potentially large gains in the public health; no connection was made between this fact and the limited role of physicians in achieving these objectives.

"Similarly, there was a discrepancy between the recognition of the desirability of rationalizing the delivery of medical services through the training and

more effective use of paramedical personnel and the impact of this on the requirements for physicians. The marked gains in the medical service industry over the past half century were predicated not as much from the expansion of the number of physicians as on the improvement in their training and on the increase in paramedical personnel".

Current information on the numbers and proportions of primary contact physicians, i.e., general practitioners, paediatricians and internists, in Canada is summarized in tabular form - see Appendix I. This indicates the continuing downward trend in the proportion of primary care physicians as a percentage of all physicians which declined from 67% in 1955 to 53.8% in 1968.

Canada's dependency on a supply of graduates from foreign medical schools has reached disturbing proportions. In 1967 and 1968 immigrant physicians registering exceeded Canadian graduates (1213 to 923 respectively in 1967). Currently about twenty-five per cent of all active physicians in Canada are immigrants.

Indeed if the supply of foreign-trained physicians had not been so adequate, the medical manpower shortage in this country would by now have become highly critical. Comparable situations would also have developed in Great Britain and the United States.³

"It is utterly inconceivable that the poor nations will continue to subsidize medically the richest nations, and it is only a matter of time before strong efforts will be made to dam these rivers of technical skills flowing towards the United States. India, Turkey and Iran have already taken positive steps in this direction, and other countries will undoubtedly follow suit - as they should. The medical manpower shortage in the United States will then assume catastrophic

proportions, and the shortcomings of our medical educational program will become all too painfully apparent."³

There is an extensive bibliography in support of the view that a worldwide shortage of physicians exists⁴ and it is a reasonable assumption that there is a need to increase the number of physicians and particularly primary contact physicians and that this need will continue for some time.

However, more valid data on this matter may soon become available from studies in four localities in Canada which have been included in the World Health Organization International Collaborative Study on Medical Care Utilization.

Canada has a rising requirement for physicians and is already unduly dependent upon immigrant physicians for medical manpower supply. The immigrant physician supply is neither dependable nor controllable.

Recommendation 19

That the necessary expansion of facilities and teaching staff be carried out for the training of physicians at a rate which will diminish our dependence on the immigration of physicians.

Recommendation 20

That maximum use of facilities be made by providing that undergraduate training facilities be operated on a year-round basis, accepting that this will require a larger staff of teachers and additional financial assistance to students due to loss of vacation earnings.

It is believed that both of these recommendations enjoy a high priority and that they can be implemented in the intermediate term.

"Output of trained manpower is irrelevant unless one knows what it is to do and, within the bounds of feasibility, how it is to do it with maximum efficiency".⁵

Deliberate efforts to increase the numbers and proportion of general physicians, for example, would involve channelling more graduates and students into primary medical care and away from those specialties currently well supplied with physicians.

Contriving a more appropriate supply of various types of physicians would require a running census of students and interns contemplating training in particular fields and relating this data to the apparent needs.

Given this type of information, those organizations capable of influencing the orientation of trainees and the availability of training facilities could become sensitive, effective instruments regulating the number and types of physicians in response to needs.

Last¹ has pointed out that "medical manpower forecasting and planning are notoriously difficult", and attributes this to the interaction of countervailing trends, e.g., "the demand for doctors has increased despite improved community health, because the prevalence of chronic disease has increased, affluence, and better education - especially health education by the mass media - and the growth of specialization, have increased demands. Moreover, an increase in the supply stimulates further demands".

The following recommendation is made notwithstanding the difficulties inherent in this area.

Recommendation 21

That the Association of Canadian Medical Colleges, The Canadian Association of Medical Students and Interns, The Royal College of Physicians and Surgeons of Canada, College of Physicians and Surgeons of the Province of Quebec, The College of Family Physicians of Canada and other such bodies capable of influencing the orientation of physicians-in-training, be encouraged to collaborate in efforts to the end that the numbers and types of general physicians and specialists trained in Canada may bear a close relation to anticipated needs.

It is believed that action to implement this recommendation should receive high priority and that it could be undertaken in the immediate future although the effects will be in the longer term.

However, it is not only important to recruit relevant numbers of physicians into the various fields, but it is also important to retain them in those fields.

Many physicians, and especially primary contact practitioners, are busier than they would like to be and the resulting overwork can be detrimental to the quality of practice as well as a factor inducing some practitioners to remove themselves from primary contact work in favour of less strenuous living conditions in institutional and diagnostic services.

To bolster the force of primary contact physicians therefore requires both inducing graduates to enter primary contact practice and making it as attractive as possible to remain.

In this respect, though economic incentives are of some importance, the 'social' aspects cannot be ignored. A study reported in the Journal of the College of General Practice of Canada in July 1966⁶ concerning

the prestige enjoyed by various fields of medicine indicated low rankings for primary contact types of practice vis-à-vis other specialties.

Various factors influence the medical student in the choice of type of practice, and the teaching centre environment is an important one of these. Development of general practice departments and teaching units in medical schools and hospitals together with relevant undergraduate training and stipulated requirements for continuing postgraduate upgrading will not only improve the quality of first contact medicine but also enhance the image of the general practitioner in the academic community as well as in the medical community generally. Such aims conform closely to those currently being pursued by the College of Family Physicians of Canada.

Recommendation 22

That development and expansion of general practice departments in hospitals and general practice teaching units in universities and teaching hospitals be encouraged.

Recommendation 23

That the Royal College of Physicians and Surgeons of Canada and College of Physicians and Surgeons of Quebec give further consideration to making one year of general or primary contact practice a prerequisite for acceptance into approved specialty training programs.

This proposal would have several effects:

- increase the availability of primary contact physicians,
- induce some who might not otherwise do so to remain in primary contact medicine once exposure to this work had allayed possible earlier anxieties,
- provide a broadening experience⁷ for those who go on to specialty training, administration or academic posts.

Habits of practice are vitally important in determining the costs of delivery of medical care. Unduly elaborate and circuitous approaches to the resolution of clinical problems can be a major source of unjustified costs in delivery of personal medical services.

"A waste not only of money but of trained personnel and logistic machinery develops when patients with relatively minor problems are entered into a network of tests, referrals and even hospital admissions, because of a deficiency of personnel oriented toward the resolving of clinical problems at the primary contact level".⁸

Clinical training for primary contact medicine in particular should be problem-oriented as distinct from a more organ-oriented or system-oriented approach. Instruction should stress the fact that history-taking provides the key to as much as 75% of all diagnoses in many practices, with physical examination and test results being relatively less useful. There are many common clinical conditions which can only be diagnosed by history.

Recommendation 24

That physicians-in-training should be taught how to practise clinical medicine as well as how to probe disease processes. They should also be imbued with the virtues of discretion and restraint in employment of diagnostic procedures, in ordering drugs and in scheduling return visits or hospital admissions - not only out of consideration for dollar costs but also for the dislocation of families resulting from the logistics involved. Clinical teachers should insist that interns and residents can justify on rational grounds any test they order. This would help to develop a sense of responsibility in regard to the

generating of costs and not only in their current practice but, more importantly, in their subsequent habits of practice.

Test-oriented habits of practice may tend to be fostered by the fact that, to an increasing degree, the training of interns and residents is given by research-oriented or laboratory-based teachers and some trainees may fail to apprehend that what seems a free-wheeling use of tests in a hospital teaching unit is an expression of a research interest of the unit or of the teacher, rather than a model for continued implementation under conditions of every day clinical work.

Indeed, this is another argument for retaining a proportion of part-time clinical teachers in medical schools since they are likely to be more patient-oriented and less disease- or system-oriented in approach.

Recommendation 25

That part-time clinical teachers be considered essential in undergraduate and postgraduate medical training.

Recommendation 26

That interns and residents should serve in ambulatory patient care facilities as part of their training.

Training and re-training of physicians is needed to ensure that they remain duly sensitive to the potential for being led astray by the results of tests. The various effects of drugs and diagnostic procedures on laboratory results constitute an important iatrogenic source of diagnostic confusion - which may prolong hospital stay.

The increasing incidence of these "syndromes due to having done one test too many" or "illnesses of laboratory origin" is recognized in the number of papers

devoted to the subject, as well as its inclusion in a Symposium on Iatrogenic Illness at the 1969 meeting of The Royal College of Physicians and Surgeons of Canada.

Discrimination in diagnostic as well as other medical activities with respect to cost-effectiveness and cost-efficiency must receive increasing attention.

"There is risk of error in making a diagnosis; there is risk in the administration of any drug or any surgical intervention - there is risk of error in most decisions on human welfare made by man. This should be remembered by agencies of government, which gain increasing control over therapeutic agents in medical and surgical intervention by promising to reduce risks to near zero, and thereby increase the likelihood of impeding medical progress. The student of science must learn to live in the atmosphere of "probably so"."⁹

Recommendation 27

It is recommended that undergraduate and postgraduate medical teaching place even greater emphasis on clinical approaches to diagnosis (as opposed to undue reliance on the use of mechanical aids and tests) and also stress the resolution of as many presenting problems as feasible at the primary contact level.

The savings which could be effected from implementing the principles in this recommendation are considerable and developments should be encouraged to achieve its early realization.

F - DEVELOPMENT AND UTILIZATION OF ALLIED
HEALTH PERSONNEL (Paramedical Personnel)

General Considerations

Part of the interest of this task force in considering further development and utilization of paramedical personnel stems from the prospect that part of the medical work now done by physicians could be performed adequately by other trained personnel, thus moderating costs in terms of dollars and in terms of physician manpower.

However, there are other arguments for exploring the possibilities of utilizing allied health personnel more fully, particularly in relation to primary medical care. Because the spectrum of clinical work is becoming increasingly broad, there should be a corresponding broadening of the manpower base which undertakes it. Physicians now function over a range which, technically, extends from giving immunization shots to transplanting the heart, and intellectually, from composing a "fit for camp" note to unravelling an intricate biochemical or neuro-physiological derangement.

The personnel tackling this wide range of tasks is almost entirely composed of highly trained professionals though the system might function more efficiently with a proper proportion of less highly trained primary contact personnel - thus permitting technically simpler, repetitive or less intellectually demanding procedures to be delegated to assistants working under direction of physicians.¹

Certain indirect savings might be postulated from this approach to greater use of paramedical primary contact personnel. The path along which the medical specialist advances leads away from responsibility for home care and therefore could lead to increased

utilization of hospital beds,² currently the most expensive item in the health care budget.

There are important possibilities for utilizing trained medical personnel for developing better triage arrangements, and better ambulance and emergency call services as well as better home care services. This would not only reduce the demands on emergency departments and hospital beds, but help spread the load of after-hours and emergency work over a broader group of medical care personnel.

The relative shortage of primary care physician together with the rising demands for medical services constitute further indications for increasing the numbers and types of persons capable of rendering primary contact services. The prospects of moderating costs in this area derive from the lesser costs of training and maintaining a physician assistant or practitioner associate as compared with a physician, whether a generalist or a specialist.

In brief, there is need for better matching of skills and tasks - because current approaches are not only wasteful in money and training, but also produce unjustified fatigue³ and boredom in physicians who may, as a result, be less capable in handling the more demanding problems which arise.

"The rapidly increasing volume of work for the individual physician is placing inordinate demands on his time and energy. Increasing the practitioner's facility in handling competently and comfortably a much greater patient load is a critical need".⁴

Further benefits may also be gained from the special qualities which women bring to many aspects of the provision of clinical care, because it would be expected that a preponderance of such assistants would be

women, recruited from the ranks of nursing. This profession has shown a disposition to innovate and to test new roles and functions in order to broaden their contribution to the delivery of health care.^{5, 6}

Because of the prospects that improved utilization of nurses in medical care delivery arrangements in the community could, to an even greater degree, complement and supplement activities of physicians,⁷ the task force arranged a meeting with executive representatives of the nursing profession to consider this matter and clarify the future roles envisaged for registered nurses. There did not appear to be any serious conflicts of interest as between the two professions in respect to this area of service.

Views were also sought and obtained regarding present and future roles of Public Health Nurses.

A study of the transfer of functions among health professions had been undertaken by a joint committee of Canadian Nurses Association - Canadian Medical Association - Canadian Hospital Association - although a 'global' approach to such a large, complex and sensitive matter is a challenge.

A more empiric and direct attack by developing specific categories of personnel to meet perceived requirements and then critically evaluating their performance may prove more serviceable, in the short term at least.

Already several types of allied health personnel have been developed through special training of graduate nurses, for example, the public health nurse, the nurse-specialist, "the outpost nurse", the paediatric nurse-practitioner.⁸ In the United States there are many nurse-anaesthetists and serious consideration is being given to the employment of nurse-midwives.

At the 1967 Annual Meeting of the American College of Obstetricians and Gynaecologists, Dr. L.H. Hillman found that over two-thirds of the audience polled favoured medically supervised midwives for the United States. Consideration to development of a category of "nurse-practitioners" has been proposed in Canada.⁹

It is logical to expect that many of the candidates for physician-assistant¹⁰ or practitioner-associate training might be recruited from the nursing profession because such personnel may be produced either by building upon the skills and interests of nurses, or perhaps by training of high school graduates ab initio. (See Appendix II).

Physicians' Assistants

The important questions of the type and level of training and utilization of physicians' assistants which would render them most valuable has been discussed by various authors.¹⁰

Historically, the first such personnel were the feldshers of eastern European countries and particularly the U.S.S.R.¹¹ This term derived from a designation for a German military field-surgeon of medieval times. More modern western counterparts include sick bay attendants and medical corpsmen.

Another type of assistant is the "assistant medical officer"¹² whose prototype was the sub-assistant surgeon of India. With training adapted for modern problems in areas of the world which are currently under-developed this category is performing valued service, and particularly in Africa.¹³

There are other varieties of medical specialists' assistants being trained or under consideration. In addition to the paediatric nurse-practitioner previously mentioned, the University of Colorado is engaged

in a program producing less highly trained "paediatric assistants" within five years of high school graduation.

Ophthalmologists are looking to relief from the manpower shortage in their field through more effective employment of ophthalmic assistants, ophthalmic nurses and orthoptic technicians as well as co-operation with optometrists working under the direction of ophthalmologists.

On this continent a program for the training of persons to assist general physicians was started at Duke University in 1965. Such "physician-assistants" are "independent", as compared to nurses, in that they are responsible for their own actions in respect to diagnosis and treatment within certain defined limits. They are intended to function as personal aides of doctors who are ethically and legally responsible for them.¹⁰

Review of Literature

An up-to-date review of selected papers on the use of health professionals to assist the physician in providing ambulatory personal health services was undertaken by Dr. George Szasz at the request of the task force. His report is included as Appendix III. The following is a summary of his findings.

- (a) A selected number of studies describing the nature, volume and outcome of the work of non-physician health personnel in ambulatory health care service settings in Canada, the United States, England and Ireland have been reviewed. Most of the studies have been initiated by physicians.
- (b) The roles ascribed to nurses and social workers in solo or group medical practices tend to reflect physicians' preconceived notions about the area of expertise of these personnel. Some of the notions

are derived from traditional roles performed in the hospital or community health agency settings. The extended or new role assignments given by physicians to family health workers, nursing caseworkers, paediatric nurse practitioners and physicians' assistants seem to indicate an emerging appreciation by physicians of the need to bridge various forms of cultural barriers between the consumers and the providers of health services.

- (c) In general, non-physician health personnel are utilized in case finding and follow-up activities; in assisting the physician in medically oriented tasks and in co-ordinating certain aspects of patient care.
- (d) Non-physician health personnel are usually attached to solo or group medical practices or health centres as employees. Occasionally public health nurses are "loaned out" to medical practitioners; social workers are sometimes engaged as "consultants". Fixed salaries are the usual form of payment; consulting social workers sometimes receive fees for their services.
- (e) The acceptance by patients of the various health personnel working in association with physicians is varied. Acceptance is highest when the physician initiates referrals, or when these personnel are placed in a highly accessible position for patient initiated consultation. Acceptance is lowest when the new or extended roles are not compatible with the patients' prevailing conceptions about who can do what for which problem.
- (f) The volume of activities of non-physician personnel varies greatly with the tasks allocated to them. The patient load of the nurse is usually greater than that of the social worker. The outcome of services performed by the various non-physician

health personnel is difficult to assess. It does appear that general medical practice settings do serve as a strategic point in the community at which disturbances can be spotted at an early stage. There is no conclusive evidence offered by any of the studies, that discovery of problems followed by care offered by various non-physician health personnel would indeed reduce the length of hospital stay, eliminate the need for certain hospital admissions or direct patients to other sources of needed help more readily than is the case at present. In addition, there is no evidence to indicate that physicians would be relieved of many time-consuming and essentially non-medical tasks.

- (g) Some studies actually indicate that early case finding before the patient had perceived his problem as serious enough to warrant utilization of services, will not be successful in sustaining referrals either to social or to medical agencies. Once the problem is perceived as serious, patients are often not satisfied unless the physician is involved in one way or another in the diagnostic or service activities.
- (h) The studies indicate an apparently good relationship between the various health personnel. This appears to be based on mutual respect towards each other's expertise, and it is perhaps related to the careful selection of the personnel participating in the various studies.
- (i) The need for further studies of the nature, volume and outcome of services of the various existing and emerging personnel, including the physician in the ambulatory patient care setting, is evident.

A practitioner-associate envisaged as suitable for use in Canada has been described¹⁴ with attributes,

conditions of service and possible roles; these are set out in the position paper "The Practitioner-Associate as a Physician's Assistant" (Appendix II).

Some of the roles and tasks which now devolve upon physicians but which could be handled in whole or in part by practitioner-associates include: home visits, midwifery, well child care, considerable military medicine, triage, ambulance attendant service, emergency calls service, frontier and outpost coverage, some geriatric care, industrial medicine, periodic health examinations on well persons, administrative duties, dispensing, immunization programs, operating room and clinical surgical assistance, some anaesthetics, service in intensive care, recovery room and cardiac care units, health counselling, school health services, intern service in non-teaching hospitals and the diagnosis and treatment of less complex or serious clinical problems generally.

Some indication of the acceptance by the medical profession of physicians' assistants is suggested by a valuable survey carried out for the British Columbia Health Resources Council by Dr. Hart Scarrow based on responses from a sample constituting about 25% of all physicians in British Columbia - an area of Canada relatively well supplied with physicians.

Of all the physicians polled 46% answered in the affirmative the question, "Do you think that a medical auxiliary of some kind could be trained to relieve you of part of the medical professional work load in your practice?". Although no prior indoctrination or promotion of this idea was undertaken, 53% of all general practitioners answered in the affirmative and 57% of those outside of metropolitan areas.

Fifty-six per cent favoured providing registered nurses with extra training to fill this role. When

questioned on their possible utilization of such a paramedical person, the three main areas of activity envisaged were: assistant to the physician in his office, procedural nurse in smaller hospitals without intern service or semi-independent assistant in smaller community outposts.

A key requirement is to make the necessary legal provisions to empower a duly certified practitioner-associate to function to a limited degree in the diagnosis and treatment of illness and injury and to dispense certain drugs under the direction of a physician. The physician would employ the associate and would assume full legal and moral responsibility for his clinical activities.

Recommendation 28

That promising proposals for more effective employment of allied health personnel in the delivery of medical care be evaluated using well designed demonstration projects.

Recommendation 29

That a project be funded under the National Health Grants to train at least a pilot class of "practitioner-associates" in a university teaching unit under medical direction and to evaluate their utilization.

High priority should be given to these two recommendations in the intermediate term.

G - ORGANIZATION FOR DELIVERY OF
PERSONAL MEDICAL SERVICES

Associations and Groups of Physicians

One of the most striking changes in the delivery of medical care that has taken place over the last twenty-five years has been the growth of group practice. This task force was very much aware of this occurrence and immediately began exploring the potentialities inherent in this newer method of medical care delivery. It was found, after examination of the literature and personal communications, that there was no consensus but rather many controversial opinions. Indeed, there is a dearth of solid evidence and no firm conclusions could be reached.

Many and large studies will be required to establish the effectiveness and efficiency of medical care delivery of associations and groupings of physicians under the many possible arrangements as compared to the servicing of similar populations by a corresponding number and variety of physicians practising independently. Most doctors are already "grouped" in some degree through hospital staffing arrangements for the rendering of more complex medical services.

Many considerations can be visualized as influencing the formation of a group. The decision of the physician with respect to joining or forming a group might result from: an inclination to co-operate with confreres; desire for assured coverage for time off for leisure, study and upgrading of training; provision of better medical coverage and improved quality of medical services;^{1, 2} greater opportunity for pursuing special interests; economic security; entrepreneurship; self-defence (where groups are predominant in an area).

Public health authorities, industry, trade unions and governments would be likely to have rather different expectations when encouraging formation of groups; better control of costs³ and patterns of practice;⁴ better distribution of personnel and services through pay inducements and through owning and locating the 'plants'; reduced likelihood of unnecessary procedures through prepayment or capitation arrangements; better integration of primary and secondary levels of medical services, and greater opportunities for effective utilization of allied health personnel.⁵

It has been estimated⁶ that 15 to 20% of Canadian physicians are now practising in some 400 formally organized clinic groups of from three to sixty members each. There are indications that this trend is increasing.⁷

Encouraging the organization of groups or associations to share expertise and responsibility as well as space, facilities, and coverage, may prove to be the most serviceable and attractive approach.⁸ Efforts to force collectivization would almost certainly evoke a negative response because of the degree of "individualism and anti-organizational bias in the medical profession which stems from the conviction that service, depending as it does on individual quality and judgment supported by individual responsibility, cannot readily be shifted to the shoulders of others and for this reason one of the basic elements of the medical value system is a resistance to lay control".⁹

Recommendation 30

That an extensive and detailed study of group practices in Canada be made to determine whether or not group practice improves the efficiency and effectiveness of medical care.

This recommendation is regarded as being of high priority in the long-term and developments in this field have to be evolutionary.

H - PATIENT IDENTIFICATION

Accurate and convenient identification of individuals by the use of unique numbers has become increasingly important in relation to methods of delivery of medical care for several reasons:

- (a) The population is highly mobile, not only in terms of change of residence, but through holiday and business travel. Obtaining medical information by telecommunication on a person who has developed medical needs in a locality remote from his medical record would be facilitated by possession of a unique identification number.
- (b) Collation of all information in offices, clinics and in hospital records, as well as identification of requisitions, prescriptions, laboratory specimens, x-ray films, etc., would also be improved.
- (c) Analyses of medical data for statistical purposes as well as other applications of computers to delivery of medical care would be facilitated because of the ability of automatic data handling equipment to manage numbers (but not names) with facility.
- (d) The possession of an exclusive number by each person would reduce risk of errors in medical management due to mis-identification.

Recommendation 31

That a unique number be assigned to every Canadian regardless of age.

Recommendation 32

That consideration be given to designing and making available to each Canadian a wallet-size plastic identity card (embossed with name, the unique number, sex, date of birth) which could serve as a printing plate for imprinting medical

and related documents, e.g., medical
care insurance claim cards.

These recommendations are capable of being implemented in the short term and are considered of medium priority.

I - THE ROLE OF THE COMPUTER AND AUTOMATED DATA
HANDLING IN DELIVERY OF PERSONAL MEDICAL CARE

The inadequacy of much of the clinical records in hospitals and clinics at the present time is freely admitted. These inadequacies stem from a variety of factors: the slow and laborious input of information through interviewing the patient, making notes in long-hand, and possibly subsequent dictation, transcription and typing; the fact that the format is randomized; the negative findings often omitted; and that nomenclature and use of abbreviations is a matter of individual taste to the extent that parts of the record are intelligible only to the writer.

"Early interest in bringing the revolution in computer technology to bear on medical practice was plagued with over-enthusiasm, naivety and unrealistic expectations. In fact, attempts to apply computer technology to medicine has had only limited success, with numerous failures".¹

Nonetheless computers do give promise of potential value² and practical applications in certain operations related to the field of health services, for example, the hotel and business functions of hospitals; hospital information systems; medical records retrieval storage and analysis; processing and "interpreting" (even at a remote site) data on patient functions where the physiological signal (output) is electric (for example, E.C.G.³ and E.E.G.); on-line monitoring of vital functions - sometimes coupled with feed-back control systems; processing and monitoring output of automated laboratory equipment and of clinical multiphasic screening units.

Computer-assisted diagnosis based on input of clinical and laboratory data is certainly feasible for an increasing range of conditions, but for most purposes

it is doubtful if this technique currently enjoys any superiority over human recall and reasoning.

Less progress has been made in applying computer technology in a practical way at the level where it could lessen requirements for physicians' time and expertise - for example, for partial automation of history taking and processing data for purposes of clinical diagnosis. The inhibiting problem in respect to semi-automating input of history, enquiry and physical findings into the clinical record derives from lack of a practical device to interface the patient's story and answers with data-handling machines.

There is believed to be a potential in future development of computer applications toward saving physicians' time, improving clinical records and facilitating their analysis for the purposes mentioned, and possibly for other indications not now able to be visualized.

Recommendation 33

That research and development particularly in respect to automatic clinical data handling is needed and should be encouraged and supported by research grants when indicated.

While awaiting development of practical hardware for these purposes, the task which suggests itself for current action is to develop the best possible question forms for uses in the various clinical disciplines. Even without a computer based system, considerable historical data input can be obtained by use of well designed forms completed in part at least by the patient, assisted by a clerk if necessary.

Recommendation 34

That a "clearing house" be organized to stimulate and co-ordinate the efforts of persons from various

clinical disciplines working in the field of automated clinical data handling, and that periodic meetings be arranged for exchange of ideas and for direction of activities which would accelerate developments.

It is doubtful if significant cost savings, or indeed time savings, may be expected in the next five to ten years from attempts to involve computers in clinical medicine generally.

J - THERAPEUTIC DRUGS

General Considerations

Drugs are a major component of the therapeutic armamentarium of most doctors and doctors' habits are the major determinants of the use and abuse of therapeutic drugs.

The cost of patent medicines in Canada is over \$100 million annually and of prescription drugs sold by retail pharmacists is well over \$200 million. These amounts are sufficiently substantial that there should be a considerable potential for modification of costs by modification of the habits of utilization of drugs by physicians and the public.

Patent medicines and over-the-counter drugs may be considered as being purchased for purposes of personal medical care. The quantity, the selection and the price are determined by a variety of influences, (cultural, socioeconomic, advertising, pharmacists, and physicians' availability and advice) which influence the layman in making his "own" choice about spending money for some product for which he has perceived a need.

Conditions surrounding the layman's purchase of prescription drugs are quite different, however, and indeed are unique in retail merchandising.

Here the purchaser has no choice in respect to selection, quantity or price because he has been instructed by another person, his physician, to purchase in an amount and at a price usually not previously known to him, a product the nature and purpose of which he probably also does not know.

The doctor's choice of the drug is inevitably influenced by the medical indications as he perceived them, personal and local habits of practice, his training

and conditioning, the availability of a drug as a consequence of research, development, licencing and merchandising, as well as the impact of advertising by direct mail and in medical journals and magazines as well as its promotion by detailing and distribution of samples.

The extent of this influence may be gauged from the fact that the drug industry spends three thousand advertising dollars each year on each doctor in the United States.¹

In this context the role of the doctor is that of an agent of the patient and as such he is morally obligated to ensure that what he recommends, for purchase, is not only indicated and likely to be more helpful than harmful, but also that it represents the best possible value in terms of cost-effectiveness.

Drugs employed in an unscientific and empiric manner can increase medical costs in several ways including increasing the risks of drug-induced illnesses² and of producing spurious laboratory results. Such practice is regarded by the medical profession as being unsound.

Recommendation 35

That the Canadian Medical Association be requested to formulate guidelines for the rational and practical prescription of drugs.

Recommendation 36

That drugs should be licenced and approved on the basis of effectiveness as well as purity and safety.

Recommendation 37

That the variety of formulations and sizes of drug products approved for sale be limited to those for which there is demonstrated need.

These recommendations should receive high priority and action to implement them should be taken in the short-term.

K - WORKING ENVIRONMENTS FOR
PERSONAL MEDICAL CARE DELIVERY

Physicians as key working units in the medical care delivery system should function in optimal working environments, i.e., offices, clinics, laboratories and operating rooms which are arranged, furnished and equipped for most efficient performance.

It is proposed that an efficiency engineering approach be undertaken to research the requirements and to develop optimal designs, giving first attention to the most-used physician environments - such as consulting-examining rooms, hospital bed rooms and reception-communication centres of clinical units (including nurses-doctors stations in hospital wards).

Such a research and development effort offers real prospects for improving efficiency in delivery of medical care at the doctor-patient level. This might be achieved at reasonable cost through collaboration between the Health Facilities Design Division of the Department of National Health and Welfare and a section of the Department of Industry with field trial areas organized in nearby working hospitals and clinics.

Optimal designs once developed could be mass produced for what would be a very large market and their employment in a majority of institutions throughout the country could be encouraged by the Hospital Services Commissions whose advice and assistance would be sought during the stage of development.

A considerable literature already exists concerning office layouts for various types of practice. From this source an early start could be made by assembling information packets for loaning to physicians establishing or renovating their working area. Availability

of such services could be publicized to physicians through medical journals and possibly through local medical societies.

A continuing active research is indicated in this matter. Provisions might also be made for encouraging and assessing innovative ideas from personnel in working medical care units. For example, "new idea" contests could be publicized in trade and professional publications to elicit ideas from health service workers for improvements in equipment or procedures which have occurred to them in the course of their use or observation of existing facilities.

An indirect benefit from such an approach would be the fostering among health workers, including professionals, of an awareness of operational efficiency and a decreased tolerance for perpetuating inappropriate procedures and environments.

Physicians and other health personnel could perform more work with less strain if optimal designs for working environments in hospitals, clinics and offices were determined and implemented.

Recommendation 38

That the Health Facilities Design Division of the Department of National Health and Welfare undertake the development of the optimal design for working areas for delivery of medical care.

This recommendation is regarded as being of medium priority, capable of implementation in the short term with benefits being expected in the intermediate and long term.

L - PHYSICIANS' PAPER WORK

The potential for improved efficiency in respect to physicians' paper work is considerable because a significant proportion of the working time of some physicians in primary contact or consulting practice is devoted to committing information to paper.

Improvements and Uniformity in Paper Forms

The unlikelihood of obtaining much relief from paper work through use of automatic data handling equipment is alluded to in the section on that topic. There, however, reference is made to the feasibility of developing standardized questionnaire and enquiry forms which might finally be collated and adopted for wider use following research and development by committees representing various specialties.

In this way greater uniformity could be developed for much of the input of history data at least, with saving in physicians' time, facility of comprehension and of analysis and storage of such information.

Such developments could be instituted and early savings realized within the jurisdiction of such authorities as provincial hospital services insurance commissions.

The insurance companies of Canada pioneered this approach several years ago when they managed to develop a single medical insurance claim form for common use.

The Canadian Armed Forces and the Department of Veterans Affairs have used standardized forms for medical purposes for decades and without such uniformity would not be able to function satisfactorily.

Recommendation 39

That a "clearing house" be developed to effect improvements and increased uniformity in design of requisitions, report forms, data summary sheets and clinical records generally, and that hospitals, clinics and other medical care facilities be encouraged to utilize such forms preferentially when feasible.

This recommendation could be initiated promptly and should receive high priority. The economics inherent in its implementation derive not only from those due to mass production and mass distribution, but from enhancing the efficiency of units in which they are used. Such a systematic approach should replace the present inefficient and uneconomical practice whereby every medical unit in the country sets out de novo to develop its own set of paper forms which not only waste the efforts of novice form designers, of print shop layout men, inventory keepers and employees in thousands of clinical units but the requirements are badly served by badly conceived forms.

In the interim it is important that the time and efforts of clinicians not be further diverted from their primary responsibilities by additional paper work.

Recommendation 40

That governmental authorities in each province avoid making further demands on physicians for more documentation unless shown to yield improved medical care.

Standardized "Medical Shorthand"

The development of a uniform medical shorthand, preferably by an international organization, could have the effect of saving a great deal of time on the part of physicians and much space in medical records and writings

Such a system might be based on an international scientific language such as Interlingua and possibly some Latin derivations, combined with the maximum feasible use of graphics and symbols which would be understandable on sight.

Such a medical shorthand if logically derived, universally taught and widely understood could have far-reaching effects not only in medical scientific communication, but in saving space in publications and time in writing as well as forestalling the proliferation of those extemporaneous abbreviations which now impede medical communication.

Recommendation 41

That a Canadian agency be requested to take the initiative in exploring the feasibility of developing a uniform set of abbreviations and symbols which could form the basis for a system of "medical shorthand".

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Province	Primary Care Physicians as Per Cent of all Physicians			Number of Primary Care Physicians						All Physicians (b)			
				Non-Certified			Certified			Total			
				1955	1962	1968	1955	1962	1968	1955	1962	1968	1968
Newfoundland	76.1	59.3	%	113	136	165	11	17	25	124	153	190	312
Prince Edward Island	64.6	56.3	%	48	43	39	3	6	8	51	49	47	83
Nova Scotia	67.4	57.4	%	316	334	340	30	48	67	346	382	407	746
New Brunswick	63.5	48.5	%	206	185	192	24	34	42	230	219	234	470
Quebec	70.2	54.7	%	2,590	2,088	2,037	290	707	933	2,880	2,795	2,970	5,848
Ontario	65.3	55.7	%	3,117	3,267	3,583	487	718	847	3,604	3,985	4,430	3,120
Manitoba	68.9	53.2	%	471	402	414	55	109	134	526	511	548	1,006
Saskatchewan	66.7	56.1	%	434	388	479	37	56	68	471	444	547	923
Alberta	65.4	56.1	%	547	601	680	68	127	163	615	728	843	1,538
British Columbia	64.0	56.5	%	842	956	1,041	127	199	238	969	1,155	1,279	2,313
CANADA	67.0	55.4	%	8,684	8,400	8,970	1,132	2,021	2,525	9,816	10,421	11,495	21,359

APPENDIX I

(a) Physicians in general practice and in paediatrics and internal medicine

(b) Excluding interns and residents

APPENDIX 2

POSITION PAPER: The "Practitioner Associate" as a Physician's Assistant

The premise that there is a general shortage of medical doctors is assumed, and there is evidence that it will become increasingly acute through the next generation¹. It seems a well documented assumption since 'The Crisis in Medical Manpower' has been the theme of several communications and conferences recently.²

An obvious solution is to produce more doctors but doubt has been expressed that the new or enlarged medical schools planned in Canada will meet the demands for doctors created by developing patterns of practice before the end of this century³.

There is also concern that sufficient qualified applicants may not be attracted to medical training because in 1965-66 there were only 36 Canadian students rated as acceptable who did not gain admission to medical school⁴.

Staffing of the new medical facilities also aggravates the manpower shortage⁵ and at least a decade is required before production of trainees begins to offset this diversion of physicians from active practice.

This manpower deficiency is felt most acutely at the primary contact or family practice level because of the impact of increasing specialization which may have gone beyond the optimum. In a recent decade in which the number of specialists was doubling the number of general practitioners increased by only one twentieth⁶

Among the treatments advocated for the relief of existing and threatening medical manpower deficiencies the 'wider use of paramedical personnel' has figured prominently^{7, 8}. It seems disarmingly logical that

escalating numbers and types of paramedical persons, disciplines, crafts and organizations should produce better medical care.

Yet there are reasons to fear that poorer medical care could in fact ensue even though the "healthy Canadians-occupied-with-ill-Canadians" ratio were raised to a not-improbable level where health services became our biggest industry and outstripped education in manpower consumption.

The concept of 'Effective Medical Care' as distinct from medical services activities is pertinent here because of the disparity which can develop between the cost and scale of activities and their effectiveness.

In this country, as well as others in similar stages of development, medical care can probably be most effectively delivered through the man-on-man confrontation by which an informed doctor applies appropriate expertise to resolve the health problem of his patient. The operational word is 'resolve' not defer to another place or time; refer to other persons or organizations; test everything possible... permissible... probable...; or even, euphemistically, 'share the responsibility'.

This does not deny the value of sharing tasks particularly in public health fields, and in obtaining needed opinions and facilities, or practical help from visiting nurses and social service workers. It rather presents a case for both more and different practitioners whose training and conditions of employment permit them to deal definitively at the primary contact level with a considerable proportion of patient-problems.

Currently many family physicians as well as pediatricians, internists, obstetricians, ophthalmologists, military, industrial and institutional doctors spend much of their time and energy on clinical problems which scarcely challenge their capabilities.

Many are frustrated and fatigued from pre-occupation with relatively trivial clinical matters as they not only lack enough time, but sometimes lack energy to handle problem cases adequately. The impact of doctor-fatigue on quality of medical care can be a matter of real importance.

A key aspect of the medical manpower problem is the need for a better matching of tasks with skills at primary contact levels of patient care. This involves the idea that the primary contact person might be other than a qualified doctor and that he might undertake to resolve clinical problems within his competence.

This concept goes beyond extending community social services or public health or visiting nurse assistance and envisages creation in Canada of a new echelon of medical primary contact persons who could be described as trained medical assistants.

The idea of trained medical assistants is not new. A similar category has functioned with enough effect to justify their long continuation as the feldshers of eastern European countries. The existence of highly trained medical corpsmen, midwives, nurse-anesthetists and a pilot class of trainees at Duke University reflects similar approaches in western countries. However, wider acceptance and utilization of trained medical assistants would involve recruiting suitable persons, training and employing them appropriately and designating them by some non-demeaning title.

The term 'practitioner-associate' might be suitable, particularly if doctors reserved for themselves, and insisted on the use of, their proper title.

Such a 'practitioner-associate' is envisaged as a specially trained medical person who would be employed on a contract basis to assist a qualified medical doctor. He or she, through continuous in-service

training in the requirements of the particular type of practice, would be entrusted with increasing responsibilities at the discretion of the employing doctor who would assume full responsibility for the professional activities of his practitioner-associate.

Further elaboration of possibilities in respect to recruiting, training and employment may help to conceptualise the type of practitioner-associate being proposed and stimulate further discussion and serious consideration in the context of Canada's medical manpower needs for 1975 and beyond.

The role of the practitioner-associate is visualized at a level between that of registered nurses and medical doctors in Canada. Their training and capabilities should considerably exceed those of the feldshers and would conform more closely to those of the "physicians' assistants" of the Duke University program⁸.

Many recruits for practitioner training would be found among those nurses who by inclination and capacity strive for more responsibility and fresh challenges. Their R.N. training could be recognized as credit for part of the 4 years of "practitioner" training. Some recruits would be found among recent high school graduates who are oriented towards medical work but whose academic attainment is just below the high level now required by medical school selection committees.

It is envisaged that the professional training of practitioner associates would be a function of universities and generally, but not necessarily, those with a medical school. It is conceivable that a university in a community without the resources to initiate or sustain a medical school might develop an institute for practitioner training through affiliation with nearby hospitals, clinics and doctors' offices in which practical training, internships and perceptorships would be available.

A university already offering a degree course in Nursing Science would require little shift in emphasis and curriculum to establish a "practitioner" training institute.

The formal curriculum might devote about three quarters of the time to classroom and laboratory teaching and about one quarter to practical work. This proportioning of time is based on the assumption that practical approved internship training will follow graduation and that the practitioner-associate, even after qualifying, will be in virtually continuous in-service training in some particular type of practice with the doctor for whom he works.

It also assumes that during institute training, the summer "holiday" would be devoted to perceptorships under adequate supervision in the offices of doctors or social workers or in public health clinics, ambulance services or outposts.

After graduation and upon qualification at completion of approved internship(s) the practitioner would be engaged to work for a doctor. The doctor in turn must have met certain requirements to qualify for the privilege of engaging a practitioner-associate.

Such qualifications might include a certain level of initial training and continuing training, qualities of character, reputation and experience, as well as facilities for practice of a type which lends itself to integration of practitioner-associate activities.

The types of practice likely to be benefited from practitioner-associateships are general practice, paediatrics, obstetrics, industrial and military medicine, institutional psychiatry, general medicine, etc.

In order to ensure adequate supervision and equitable distribution and also to discourage

entrepreneurism it would seem advisable that a doctor not be permitted to engage the services of more than one practitioner-associate. The work contract should have a term of two years, preferably to follow a 'trial-marriage' period of three months, so better practitioner-associates may exercise the option of transferring to associateship with another doctor in order to obtain better conditions or remuneration.

Thus incentives remain, for the less satisfactory practitioner-associates would be less in demand and consequently less well rewarded. Practitioner-associates would not be legally empowered to conduct a solo practice, although under certain conditions, in remote areas, they might head the medical facilities of an outpost or a military or industrial installation, under the direction of a doctor accessible through telecommunications.

Practitioner-associates of some experience and exceptional ability should have the option of qualifying for admission to medical schools by passing suitable entrance tests. Indeed throughout the healing arts it would seem desirable to borrow one of the better ideas in the Russian medical system and that is to make it feasible for professionals of exceptional ability and energy to attain higher qualifications.

This could avoid some of the wastage and frustration of able, well motivated persons who may find themselves penalized for life by one substandard high school mark, or 'trapped' within the limits of a particular discipline.

The objection might be raised that medical care of a generally inferior quality could result from utilization of practitioner-associates⁷. However, when it is considered that inadequacy of medical care at present results from unavailability in many areas and situations

of any capable primary contact person, this objection loses much of its force.

As to the possibility that practitioner-associates might be given or might assume responsibilities beyond their experience or ability, it could be pointed out that this argument could equally be applied to the use of interns and residents in teaching hospitals and of nursing personnel in intensive care, emergency, cardiac resuscitation units, and in outposts.

That patients generally might insist on attendance by the doctor at all times rather than his associate also seems unlikely since most patients with confidence in their doctor are willing to entrust themselves for a particular time or condition to whomever the doctor delegates, for in so doing he has implied adequate competence in his designate.

Doctors would be unlikely to abuse the practitioner-associate by arranging for him to do an inordinate proportion of the work because of the option of the practitioner-associate to terminate the contract after two years. There would be even less likelihood of this occurring if the fee structure relating to work carried out by the practitioner-associate was based on a fee schedule appropriately discounted in relation to that applying to similar services rendered by the qualified medical doctor.

SUMMARY

Implementation of measures for training and utilizing practitioner-associates as outlined could make it feasible not only to close the widening gap in medical manpower within 10 years but to do this at less cost both for initial training and for long range support of the health establishment.

The approach of better matching of skills to needs should permit resolving a higher proportion of patient-problems at the primary contact level, thus obviating the waste of money, personnel and logistic machinery which results from a patient when a relatively simple problem is entered into a maze of tests and consultations sometimes because the primary physician was too harassed to effectively engage the problem clinically.

The proposal properly retains the doctor in the position of prime responsibility for the conduct and quality of medical practice. Its implementation could provide individual and personalized medical care to many who might otherwise long remain sub-marginal in this respect by reason of economics or geography.

APPENDIX 3

REVIEW OF SELECTED CURRENT STUDIES
IN THE USE OF HEALTH PROFESSIONALS
TO ASSIST THE PHYSICIAN
IN PROVIDING AMBULATORY PERSONAL HEALTH SERVICES

Submitted to
The Task Force on Methods of Delivery of Medical Care

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This review of selected current studies in the use of health professionals to assist the physician in providing ambulatory health services has been prepared for the Task Force on Methods of Delivery of Medical Care.

The review highlights the use of the public health nurse and the social worker in the ambulatory care practices of individual physicians and physicians' groups. Shorter references are made to some of the emerging professional roles of non-physician personnel in the ambulatory patient care settings.

In preparing this review, a large number of articles appearing in various health professional journals and in several books were collected. The selection of appropriate studies for inclusion in this review was guided by a number of criteria. Included were those studies conducted in ambulatory patient care settings which:

1. described nurses and social workers functioning in extended roles;
2. reported on the use or development of personnel capable of performing some skills currently practised by doctors, nurses and social workers;
3. presented some documentation of the nature, volume and outcome of the work performed by these non-physician health personnel.

The review of the selected studies has been divided into four sections.

The first section contains descriptions of the work of the social worker in various office settings of physicians working in individual or group practices.

The second section contains the reviews of those studies which examine the expanded functions of the nurse in office practices, a hospital ambulatory clinic, and the community.

The third section deals with the overlapping roles of the nurse, social worker and physician in family or community oriented practices. This section includes the descriptions of the nursing caseworker and the family health worker as well.

The fourth section deals with two previously non-existent and presently developing programs: the physician's assistant and the child health associate.

The four sections have been arranged to afford some degree of comparison between rather fragmented and non-related series of studies; and to introduce the notion of an evolutionary tendency in the development of new roles for health personnel.

No specific mention has been made of the concept of the "health team". This term has been found to be a somewhat overused phrase in many articles, containing a great many meanings and implying a variety of relationships between health personnel and patients.

No studies of significance referring to the work of the pharmacist, the physio- or occupational therapist or the dietitian, in ambulatory health care settings, have been found.

Included in the bibliography, but excluded from this review, are articles or studies dealing with health personnel supportive to nursing or social work.

A list of references and a selected bibliography conclude this review.

SUMMARY

A selected number of studies describing the nature, volume and outcome of the work of non-physician health personnel in ambulatory health care service settings in Canada, the United States, England and Ireland have been reviewed. Most of the studies have been initiated by physicians.

The roles ascribed to nurses and social workers in solo or group medical practices tend to reflect physicians' preconceived notions about the area of expertise of these personnel. Some of the notions are derived from traditional roles performed in the hospital or community health agency settings. The extended or new role assignments given by physicians to family health workers, nursing caseworkers, paediatric nurse practitioners and physicians' assistants seem to indicate an emerging appreciation by physicians of the need to bridge various forms of cultural barriers between the consumers and the providers of health services.

In general, non-physician health personnel are utilized in case finding and follow up activities; in assisting the physician in medically oriented tasks and in co-ordinating certain aspects of patient care.

Non-physician health personnel are usually attached to solo or group medical practices or health centres as employees. Occasionally public health nurses are "loaned out" to medical practitioners; social workers are sometimes engaged as "consultants". Fixed salaries are the usual form of payment; consulting social workers sometimes receive fees for their services.

The acceptance by patients of the various health personnel working in association with physicians is varied. Acceptance is highest when the physician initiates referrals, or when these personnel are placed in a highly accessible position for patient initiated consultation. Acceptance is lowest when the new or extended roles are not compatible with the patients' prevailing conceptions about who can do what for which problem.

The volume of activities of non-physician personnel varies greatly with the tasks allocated to them. The patient load of the nurse is usually greater than that of the social worker. The outcome of services

performed by the various non-physician health personnel is difficult to assess. It does appear that general medical practice settings do serve as a strategic point in the community at which disturbances can be spotted at an early stage.

There is no conclusive evidence offered by any of the studies, that discovery of problems followed by care offered by various non-physician health personnel would indeed reduce the length of hospital stay, eliminate the need for certain hospital admissions or direct patients to other sources of needed help more readily than is the case at present. In addition, there is no evidence to indicate that physicians would be relieved of many time-consuming and essentially non-medical tasks.

Some studies actually indicate that early case finding before the patient had perceived his problem as serious enough to warrant utilization of services, will not be successful in sustaining referrals either to social or to medical agencies. Once the problem is perceived as serious, patients are often not satisfied unless the physician is involved in one way or another in the diagnostic or service activities.

The studies indicate an apparently good relationship between the various health personnel. This appears to be based on mutual respect towards each other's expertise, and it is perhaps related to the careful selection of the personnel participating in the various studies.

The need for further studies of the nature, volume and outcome of services of the various existing and emerging personnel, including the physician in the ambulatory patient care setting, is evident.

A. THE SOCIAL WORKER IN MEDICAL PRACTICE

Social work is a relatively new profession. Unlike medicine, the practice of social work was founded upon considerations of social policy and organizational or professional requirements, not upon the conscious demands of the client himself¹.

Medical social work arose from a desire of governments and philanthropic agencies to police the use of health related charity and to close those gaps in health and welfare services which had become evident early in this century.

The tools of the medically oriented social worker include

- i) material relief, in which actual funds may be provided to tide the patient over an emergency;
- ii) familiarity with all the resources of the community for the appropriate utilization of a particular agency or facility by patients; and
- iii) information to aid the patient in understanding his illness and in adjusting his life to the actual situation.

In the United States, Cabot was instrumental in establishing social services in the out-patient department of the Massachusetts General Hospital in order to "serve the patient in his real trouble ... which is understandable and helpable only when you know ... bodily state ... mental state ... bodily environment ... mental environment"².

In Canada, hospital social work was inaugurated through the establishment of the Montreal General Hospital Social Service Department in 1910. Since then, social services have become an integral part of large hospitals, out-patient clinics, rehabilitation centres, and a variety of community agencies.

Some of the social service departments were organized to deal mainly with the patient's financial needs and environmental problems, while others have laid more emphasis on the development of liaison with community health and welfare agencies. The changes in the provision of health services are now increasingly taking the emphasis off financial problems and allowing medical social workers to concentrate on the patient and his reaction to his illness³.

The idea of the social worker working with a group of physicians in an ambulatory medical practice setting goes back to the late 1940's, when Patterson suggested that general practice of medicine served as a strategic point in the community, at which disturbances can be spotted at an early stage; where crises can be dealt with promptly and clients' problems do not have to be fitted into the eligibility requirements of a specialized service⁴.

Several experiments have been initiated in Ireland, Great Britain, Canada and the United States in which the utilization of social workers in ambulatory health care settings have been studied.

THE SOCIAL WORKER IN A SOLO MEDICAL PRACTICE

Backett, Maybin and Dudgeon have studied a small rural practice in Northern Ireland where a social worker was assigned to a solo practice for one year⁵. The purpose of the investigation was to:

- i) measure the unmet need for social care in the medical practice;
- ii) describe the extent of the social worker's work and the types of problems encountered;
- iii) estimate how much assistance is given by the social worker to the physician; and
- iv) record the various agencies involved in dealing with problems among families in the practice.

A social problem was regarded as any problem tackled by the social worker with the agreement, or at the request of the general practitioner.

The Unmet Need

The social worker had actually visited all the 467 families registered in the practice. Of the 1,371 patients, 118 (12%) with social problems were found and classified. 54 (46%) of these were discovered in the course of medical treatment, and 64 (54%) were encountered by the social worker during her routine visits.

None of the problems discovered by the social worker had been known to the practitioner before, and they thus represent a measure of the unmet need for social care in the practice which existed at that time.

The Extent and Type of Problems

No attempt has been made to estimate the gravity of the problems encountered, but the extent of care which was actually undertaken may be related to their seriousness. About half of the families involved were visited once or twice; and the other half visited three or more times.

The needs of the less frequently visited groups were largely concerned with appeals, applications, certifications, etc.; the needs of the more frequently visited families were for help with long-term problems of family relationships or with problems of adaptation to chronic illness or old age.

The group of families and individuals cared for by the social worker differed significantly from the practice as a whole only in that it contained fewer old people and fewer people living alone. This finding was contrary to the investigators' expectations, and it is also contrary to findings of other studies on the work of the social worker.

The Effect of the Social Worker on the Physician's Work

It is suggested by the investigators that the presence of a social worker with time to care for the families was of assistance to the physician only in the sense that it left him more time for what has been called "real medicine". There is, however, no quantitative evidence in this study of either an increased volume of patients seen by the physician or of an increase in the duration of his consultations.

The Effect of the Social Worker on the Patient

The social worker was of most value to the patient in uncovering problems which were medical as well as social, and where she was successfully able to urge consultation. The authors indicate that most of the problems encountered by the social worker were of the long-term type, and that at the writing of the paper these continued to disturb the households in question.

The Effect of the Arrangement on the Social Worker

It was the conclusion of the investigators that the special relationship of the family doctor to his patients is the opening for others working close to the physician to have ready access to the patients; in fact, unless the social worker or health visitor is identified by the patient more closely with the general practitioner, she will not have an easy access to the problems of a social nature.

Use of Other Agencies

A finding in this study was that over half of the families identified by the doctor and social worker were already in some way connected to a social agency, but the activities of these agencies were not coordinated and their individual activities limited.

The large number of contacts made with agencies by the social worker on this project, suggested that one

of her main contributions to the work of the practice was in mobilizing and co-ordinating this kind of help.

THE SOCIAL WORKER IN A GROUP MEDICAL PRACTICE

The Northtown Project

Collins has reported on the social worker's experience in "Northtown", England when she was introduced into the practice of four general practitioners who had about 9,000 patients registered in their practice⁶. The study had four aims:

- i) to estimate the extent of need for social work in such a population;
- ii) to assess the kinds of problems presented;
- iii) to study the pattern that social work might take in such a setting; and
- iv) to see whether such a service might prevent health breakdown and have any effect on the rate of hospitalization.

The Extent of Needs and the Nature of the Problems

To estimate the need for a social worker, a sample of 319 patients were drawn for study from the list of 9,000 patients. These patients were selected:

- i) by the physician or the social worker with the physician's agreement. One-third of the patients fell into this group. Included were patients over 70 years of age, persons making excessive demands for medical services, and families with a parent removed by death or illness;
- ii) by the social worker who screened the correspondence coming into and going out of the doctors' offices. Close to two-thirds of the patients were selected this way. Included here were patients awaiting admission to hospital or out-patient consultations, as well as those who were referred by hospital social workers; and

iii) by patients' self-referral (16 out of 319 patients).

During the one year of the study, of the 319 patients selected, 60 had no identifiable social problem; 53 were not assessed; the remaining 206 required help with problems associated with medical need.

Approximately 20% of the patients suffered from diseases of the circulatory system; 10% each from emotional/psychoneurotic, genitourinary and nervous system problems, as well as "ill defined" conditions. The remaining 40% included digestive, allergic, joint, neoplastic, respiratory and skin problems, in that order of frequency.

Pattern of Services

The patient, doctor and social worker did not always agree on the content of the referred problems. The needs of patients with problems seemed to fall into three broad groups:

- i) personal (anxiety, financial);
- ii) treatment (including after-care); and
- iii) rehabilitation (including education and employment).

The more difficult a patient's problem was, the more likely he needed services in all three groups. 87 (42%) of the 206 patients required casework; 77 (37%) needed trained, but less skilled help; and 42 (21%) were in need of some form of administrative assistance.

Most patients with difficult problems were middle-aged; women outnumbered men. Women with homes broken by death or desertion were particularly liable to have casework problems.

Difficult problems were not necessarily associated with low income or lack of education, and there was some evidence to suggest that those with the advantages of education had a greater expectation of themselves and were less tolerant of their own failures.

Effectiveness of Services

Ninety-three per cent of the patients seen by the social worker found their first interview helpful -- because "somebody understood the problem"; "felt less worried after talking things over". Fifty-three per cent felt that the problem discussed had now been solved; 23% thought that it had been improved. None of the patients felt that the social worker had given bad advice or that she had been unsympathetic.

In this study no attempt was made to relate the resolution of the problems to a decrease or avoidance of hospitalization, nor was it discovered whether satisfactory resolution of these problems might remove some of the load from the medical practitioner's shoulders.

The Caversham Project and The Saskatchewan Study

Goldberg, Neill and Speak have initiated, in 1965, the five year "Caversham Project" in a London suburb to "take a closer look at the nature of social work in general practice and to relate it to other demands on social work resources in the community"⁷.

Just around the same time, Wolfe in Canada initiated a 21-month long exploratory study in an urban community in Saskatchewan to demonstrate the role, the work and relationship to doctors of a full time medical social worker in a group medical practice⁸. There are sufficient similarities in the Caversham project and the Saskatchewan study to warrant a comparison between the two.

In both practices, the social worker was to be used as a specialist in social sickness, patients being referred to her whenever the doctor thought it was indicated. Both studies were designed as exploratory and descriptive studies, hence no control and no study groups were used.

In both studies, the introduction of a social worker into the two medical groups presented few difficulties, because the medical partners had longstanding interest in the social and psychological problems of their patients.

The Caversham project describes the social worker's performance in the practice of five general practitioners with a total list of about 9,000 patients. The staff consists of a secretary-receptionist, a full-time nurse, and two full-time health visitors apart from the physicians. The social worker has a separate room where two-thirds of her client interviews take place; the other third occurs in the patient's home or occasionally in the hospital.

The Saskatchewan study was carried out in the Saskatoon Community Health Services Medical Clinic. During the period of study, the number of general practitioners increased from six to seven, and specialists from two to four. There is no indication of the number or function of other health professional workers in the practice during the duration of the study.

Nature of the Referred Social Problems

In the Caversham project, physicians referred patients to see the social worker for one or more of the following general problems:

- i) Physical complaints related to social problems (about 37% of referrals).
- ii) Vague symptoms, often related to stress of daily living (30%).
- iii) Social repercussions of psychiatric illness (10%).
- iv) Overt, social problems such as marital difficulties. (23%).

Forty-one per cent of all the referrals were made for assessment and social history. Thirty-six

per cent were a request for help in providing social services; 23% for therapy (casework).

In the Saskatchewan project, the areas of social dysfunction were designated as major or minor in five groups: problems related to

- i) accommodation
- ii) job
- iii) social activities
- iv) family
- v) medical diagnosis and treatment.

Thirty per cent of all the problems were classified as family problems; 10% each were classified as problems with accommodation and social activity; and 20% each to problems with jobs and to medical diagnosis and treatment.

Volume of Services to Referred Patients

In the Caversham project, 687 patients out of the list of about 9,000 patients were referred to the social worker in a 28-month period. Thirty-six (5%) patients declined to see the social worker. Thirty-two (4.6%) were already the concern of other social workers.

As some patients were referred twice or more, the total referrals amounted to 879 in the stated time. The social worker's caseload generated from the referrals amounted to about five new patients a week; as 80% of the patients were seen more than once, the resulting caseload was about 15 patients per week.

In the Saskatchewan study, 176 out of the unspecified number of patients visiting the clinic were referred to the social worker in a 21-month period; 17 patients were referred twice. The referrals generated a total of 718 contacts with the social worker, placing her workload at between eight and nine patients per week. Besides this, however, there were 566 contacts

with at least one member of the patient's family during the period under study. The majority of cases were given social service for one month or less, about 15% received services for over one month.

Social Characteristics of the Patients

In the Caversham project, two-thirds of the patients interviewed were 60 years or over; two-thirds were women; two-thirds of the caseload were widowed, single, divorced or separated. The age and sex distribution of the patients differed from those of the practice population and of the neighbourhood. It was suggested by the authors that amongst other reasons, this is due to the fact that the health visitors deal with most young families.

In the Saskatchewan study, the patients suffering from social problems were more likely to be between 20 and 44 or over 65 years of age; more likely to come from lower social classes; and more likely to be unemployed. Two-thirds of the patients were women; and two-thirds of the referrals to the social worker were actual or potential social isolates.

Outcome of the Referral

In the Caversham project, assessment of outcome had not been attempted. Most of the problems dealt with were related to longstanding family, marital, sexual or work problems, and to realistic anxiety or concern about these problems or about difficulties with health.

The authors suggest that the social worker's accessibility, contact with a number of vulnerable families, and chance to intervene promptly in a crisis, may have prevented future problems.

Over two-thirds of the referred patients had never been in touch with social agencies before. No indication was given as to whether the physicians, health

visitors or others had previously diagnosed and/or assisted these cases.

In the Saskatchewan study, the outcome of the cases referred to social workers was evaluated according to two criteria: first, the social worker's professional judgement; and second, mutual consent regarding termination of social service by the social worker and/or the referred person or persons.

A case was considered to be solved when there was improvement to the extent that service by the social worker was no longer required. According to this definition, about 40% of the cases referred were solved; about 25% were transferred to another social welfare agency; about 20% were considered unsolved; while the remaining 15% were still unresolved when the study ended.

The Relationship to the Staff

In the Caversham project, the social worker was considered to have become an effective link and coordinator between the general practice and a wide variety of other social agencies in the community. The authors felt that genuine team work on a partnership basis between medical and non-medical colleagues was feasible.

Instead of being under the close supervision of the physicians, a rather equalitarian relationship appeared to have developed between the staff and the social worker. In this situation, the social worker kept close links both with doctors and her own colleagues yet each was allowed to attain its identity and possibilities for professional development were retained.

In the Saskatchewan study a general cordiality was observed between doctors and the social worker. The social worker was allowed to use her own professional skills in making a social diagnosis, although there was

a tendency by the doctors to write prescriptions for social therapy and pressure the social worker to fill the prescriptions.

These tendencies were resisted by the social worker successfully. Those members of the medical group who had had some psychiatric training used the social worker far more than did the other doctors of the group. There was also some tendency by some of the doctors in the group to have the social worker duplicate existing community services, so that there would be closer liaison with the patients.

At times there was inadequate contact between doctor and social worker, when the social worker was conducting her casework. It was the subjective feeling of the investigators that, in general, there was a close working relationship between social worker and doctor and the continued sharing of ideas helped to better understanding of the patient's need.

THE SOCIAL WORKER IN PRIVATE PAEDIATRIC PRACTICE

In the United States, two studies reviewed the use of the social worker in the framework of paediatric practices.

Townsend's Study

Townsend describes his experiences in an urban community in the State of New York during a three-year period when the services of a social worker were added to his office staff of nurses, secretaries, receptionists and a laboratory technician in a paediatric practice⁹.

Method of Referral

The services of the social worker were "offered" to patients when the paediatrician sensed a problem where social services might be utilized in the patient's best interests.

The social worker acted as a consultant, although it was up to her to make the initial contact with the family after the paediatrician introduced the suggestion for the conference to the patient's family.

Volume of Service

During a three-year period, 135 out of an unspecified number of families were urged to take advantage of the services; 94% accepted. Reason for the refusals is not documented. The patients were seen for a lengthy initial interview, and then for usually between four and ten repeat interviews.

Nature of the Referred Social Problems

The paediatrician categorized the patient's problems into four areas:

- i) Problems related primarily to the parents, such as alcoholism, crippling or other chronic diseases. This group comprised 17% of the referrals.
- ii) Problems involving school made up 26% of the referrals.
- iii) Problems with the child as expressed by parents; 34% of referrals.
- iv) Problems related to the practice of the paediatrician, including the need for "follow-up", financial assistance to patients, etc., 23% of the referrals.

Outcome of the Referrals

In subjectively evaluating the project, Townsend expressed his feeling that the experiment was a success. He based his conclusion on:

- i) parent acceptance and expressed desire for future social work help when indicated;
- ii) increased utilization of social work services by the paediatricians' associates; and

iii) the initiation of similar projects by two other paediatrician group practices.

Townsend admits that the enthusiasm with which the paediatrician proposed the social services to the patient determined to a large degree the measure of acceptance. Although Townsend states that the social worker "saved him numerous hours of work in the analysis of the behavioral problems in practice", he offers no evidence to substantiate this.

Three years after his first report, Townsend made a further report on the utilization of the social worker. The activities of the worker have crystallized into three areas:

- i) intake interview following referral by paediatrician;
- ii) working out referral of the patient to appropriate agencies; and
- iii) support of the family until referral could be completed.

The social worker's activities were supported in part by patients' fees -- and partly absorbed by the office overhead. The effect of this quasi-fee-for-service arrangement on the social worker's activity is not examined in the reports.

Wishingrad's Study

A similar experiment involving the use of social workers in a two-man partnership paediatric practice in Chicago is described by Wishingrad, *et al*¹⁰. The social worker held "office hours" two half-days a week, primarily interviewing parents.

Patients were charged for 45-minute visits, the same fee as for the 15-minute visits to the paediatrician. The social worker was also utilized for contacting agencies, keeping records, etc. and for these

activities she was remunerated according to the prevailing salary schedules for similarly trained caseworkers.

Method of Referral

The paediatrician selected the patient for workup. It was made clear to the patient that the paediatrician carried the final responsibility, and that the referral was necessary for the doctor to better manage the problem. The social worker's written report was discussed at weekly lunch conferences, where a decision was made of further recommendations to the patient. This was communicated to the patient by the paediatrician.

Volume and Nature of Services

In a nine-month period, 60 families were seen by the social worker representing problems produced by 35 school age, and 25 pre-school children. Of the 60 families, 13 (21%) discontinued casework interviews for reasons not stated.

The remaining 47 families completed their evaluation. Thirty-two followed the recommendations which included psychiatric referrals, agency referral and casework counselling. There appeared to be no connection between payment of social work services and any factors in the program.

Outcome of the Referrals

No quantitative evaluation of the caseworker's performance is given. In the paediatrician's view, a medical team including the social worker, with the physician as the manager, is acceptable in private practice. With the aid of a caseworker, a fuller service may be rendered to the patient. The patients who have the best relationship with the paediatrician are most likely to follow the social worker's recommendations.

After three years, the program has become an integral part of the paediatric practice; several new patients have come because of the knowledge that the caseworker's services are available.

B. THE NURSE IN MEDICAL PRACTICE

Although the nurse is the professional person most able to assume some of the physician's traditional role in the home and in the doctor's office, her customary role in ambulatory medicine is usually as a public health or visiting nurse or a doctor's office aid.

As a home visiting or public health nurse, her practice is usually divorced from close collaboration with physicians. As an office aid, she has greater opportunity for collaborative work, but usually performs minor technical duties and manages the administrative aspects of the doctor's practice¹¹.

In recent years, much has been written about the changing role of the nurse and predictions have been made that nurses will be based in hospitals, physicians' offices, health service centres, and move freely from there into the community, assuming primary health contact roles with increased attention to prevention, identification, sustaining and follow-up care¹².

Relatively few experiments have been carried out to investigate the nursing component of ambulatory medical care; the differences in the nurses' and the physicians' approach to the problems of patients; the volume of patient care which can be undertaken by the nurse; and the resulting changes in the workload of the physician, the rate of hospitalization or the length of hospital stay of patients.

It is convenient to review the few studies of extended nursing roles according to their setting: in the office, in the hospital-ambulatory department, and in the community.

THE NURSE'S EXTENDED ROLE IN THE OFFICE SETTING

The Nurse Employed by Medical Practitioners

Cartwright and Scott studied two general practices, each staffed by two doctors, a nurse and a medical social worker, for 12 months¹³.

The particular practices in which this study was carried out constitute the Edinburgh University General Practice Teaching Units and thus, are somewhat atypical of the general practices found in that area. The practices carry a heavy teaching commitment, and the patients on the list of each doctor are relatively small.

Approximately 2,500 patients are registered with each practice. Approximately 150 medical students are attached to the unit for three month periods: practice instructions are carried on virtually throughout the year.

In addition, the age distribution of the patients attending the practice differs from that in Scotland and Edinburgh, there being an excess of children under five and a dearth of middle age people 45-64. Living conditions in the practice area are characterized by overcrowding and by the frequent absence of bath and private lavatory facilities.

Organization of Practice

The doctor, the social worker, the nurse each had their own consulting room. The nurse was available during the morning and afternoon consulting hours, and for one evening a week. The duties of the nurse included:

- i) contact with patients in the office;
- ii) daily case conferences with doctors and social workers;

- iii) supervision of office equipment and the contents of the doctor's bag;
- iv) developing and maintaining contact with local health authority services; and
- v) occasional home visiting.

Consultations with the Nurse

During the period of the study, each nurse at the two practices was concerned with about 12-16 consultations per working day -- an average of 1.5 consultations per year for each registered patient. Less than 6% of the total contacts took place in the home because the local authority health visiting service took over that responsibility. About 25% of the contacts occurred during antenatal and child welfare sessions and 70% during the normal consulting hours.

Method of Consultations

At the antenatal and child welfare sessions, both the physician and nurse were present. Patients consulting at the practice for the first time always saw the physician. The patient was referred to the nurse in one of three ways:

- i) physician asked for the nurse's assistance -- this occurred in 24% of the cases:
- ii) physician sent patient directly to the nurse -- this happened in 10% of the cases; and
- iii) physician might ask patient to return in a few days' time to see the nurse -- in 55% of the cases.

In about 11% of the cases, the patient took initiative to call upon the nurse.

Once the nurse had seen the patient, she might refer the patient back to the physician, or she might call the physician during the consultation. In case the patient returned to the nurse with a new condition, she would arrange to have the physician see the patient.

It is not clear from the descriptions how the termination of the patients' visits were arranged.

The nurse was involved in approximately 10 of the physicians' daily consultations, this proportion representing 13% of the morning and afternoon, and 2% of the evening office patient load of the physician.

The doctors were involved in 40% of the nurse's consultations. Twenty two per cent of this involvement occurred because of the physicians' initiative, and in 18% of the cases because of the nurse's wish.

Actions Taken by the Nurse

Three broad areas of action can be identified:

- i) The nurse helped in the clinical examination of the patient in 41% of her consultations. Weighing, checking temperature, pulse, respiration, taking specimen, or testing urine were a major part of her activities.
- ii) During 60% of her consultations, the nurse performed some form of a therapeutic activity: the application of dressings, supervision of various aspects of personal hygiene activities, administration of injections, enemas, douches, throat paintings, etc.
- iii) In 70% of her patient contacts, the nurse gave advice and information to patients, and explained various aspects of their illness and listened to their problems. She also offered diets, exercises, birth control information and advice relating to various aspects of family relations.

Effect of the Nurse on the Physicians' Work

Conditions which led to high (four or more) nurse consultation rates per patient consulting, were mainly chronic or long-term conditions such as malignant diseases, exzema, psoriasis, pregnancy, tuberculosis, asthma, rheumatic diseases.

Due to her involvement in the antenatal and child welfare clinics, the nurse consultations included a high proportion of young children and women of child-bearing age.

The nurse's activities varied in relation to the person initiating the consultation, but the doctor tended to use her as an advisor and passed onto her, patients who had a greater than average need for therapeutic listening.

Indirect evidence only is available in this study to suggest that the doctors tended to do fewer dressings, give fewer injections and performed more extensive examinations when the nurse was available. The nurse appeared to relieve the physician of a number of functions which the physician may have considered arduous or frustrating -- such as therapeutic listening.

The nurse appeared to help extending the care given to the patient, and helping to ensure efficient collaboration between the home visiting services and the physician. The investigators suggest that the relatively high patient visit rate to the doctor (6.6 per patient per year) is an indication that the nurse's presence does not necessarily reduce the overall amount of work performed by the physician.

The appreciable amount of discussion between nurse and patient often revealed problems of which the physician was made aware at daily case conferences -- these led to more personal contact with his patients.

The Relationship to the Social Worker

Liaison and integration of work between these two members of the team occurred mainly during daily case conferences. The nurse whose working hours were identical to those of the social worker, had 2.6 consultations to every one of her colleague's.

The social worker gave more time to the patient, and concentrated more on difficult home problems. About 4% of the social worker's casework was initiated by the nurse; a high proportion of these referrals were maternity cases.

The utilization of the nurse's expertise in this investigation appeared to be based on preconceived ideas of the physician, partly derived from his image of the work done by the nurse in the hospital, and partly by the nature of personal experiences with nurses employed in the community services.

Nurse Attached to Medical Practice

Another way of utilizing the services of the nurse in a general practice is through inter-agency co-operation in which the nurse retains her separate attachment to her agency.

The "Health Visitor" in a General Practice

Utilization of the health visitor in the London borough of Bromley gives an example of such a relationship¹⁴. Whereas the general practitioner is the "doctor of the first contact" where illness is concerned, the British health visitor is the "advisor of first contact" where all families are concerned, because she is statutorily required to visit and follow up all new babies.

Extended Role of Health Visitor

Originally concerned with the active saving of infant life, the health visitor's work has gradually extended to the promotion of health in every age group. In the Bromley study, five health visitors were attached to group practices. Each health visitor worked entirely with the patients belonging to the group, and worked from the practice premises. The health visitor visited all the families, within the doctors' lists, who had

children under the age of five years. It was her job to observe the family and visit, educate and give support to the mother to keep the children well.

If she detected any sign of deviation from the norm, or if any illness arose, the child was referred to the general practitioner.

Outcome of the Services

The extent and nature of the utilization of the health visitor and her relationship to the physician or other members of the general practice groups is not reported. Indications are given that the health visitor finds that mothers increasingly refer minor problems to her instead of calling on the physician.

She visits children of any age suffering from infectious diseases, and gives advice as to their care. She also visits any person in the practice whom the doctor may consider to be in need of social or nursing advice. The health visitors and the general practitioners meet daily in an informal way and discuss problems and reach mutual decisions.

This ensures a greater continuity of care; the health visitor keeps the doctor informed of the progress or problems arising in families whom he may rarely see. The doctor's knowledge of his patients, the medical records which are readily available, are of value to the health visitor.

It is suggested, but not substantiated by data, that the health visitor could undertake a larger caseload than formerly.

PUBLIC HEALTH NURSE IN THE PHYSICIAN'S OFFICE

The "York" Project and The Contra Costa Project, General Description

In January 1967, a "special public health nursing project" was initiated in the borough of East York in metropolitan Toronto, to study the collaboration between the private medical practitioner and the public health nurse¹⁵.

Up to date, only a preliminary descriptive report is available on this project. A public health nurse employed by the East York Health Unit was selected to work closely with four general practitioners in the area.

Although not a group practice in the accepted sense of the term, the medical practices are closely associated geographically and through sharing of night and weekend calls. Most of the patients (numbers are not given in the report) are drawn from the East York area which is largely residential; homes are modest, most are self-owned, resulting in a relatively stable population of 91,000 people.

The area is served by a complex network of health welfare and recreational facilities. The project nurse makes her headquarters in the Health Unit office, but has access to the office facilities of the participating physicians.

Unlike her nursing colleagues in the Unit, she is not assigned to a designated geographical area; instead she gives public health nursing service to the doctor's patients wherever they may be within the Unit boundaries. Her work does not include service in schools or clinics. With these exceptions, however, she works within the same policies and gives the same type of nursing service as the regular nursing service of the Unit.

As well, she utilizes the Unit supervisory, consultative, and educational facilities. She meets weekly with the four doctors to discuss referrals for nursing service, which are completed in writing; to confer about service given; and to review records. In addition, she communicates with the doctors by telephone when necessary.

A somewhat similar experiment was conducted in the Contra Costa County (California) Health Department in 1966, in which an experienced staff of public health nurses was assigned to a private medical centre in which three physicians practised¹⁶.

The two participating groups agreed upon three objectives:

- i) to provide a more integrated pattern of preventive and therapeutic tax-supported care through collaboration and communication;
- ii) to determine whether the use of public health nursing skills would extend the physician's time; and
- iii) to develop guidelines for future co-operative plans.

A population of 24,000 consisting of numerous elderly retired people living in a predominantly rural area of some 250 square miles, was served by the participating group of private physicians.

The public health nurse was regarded as a member of the local health department nursing unit, and reported there each morning for liaison consultation with other staff members, weekly conferences with her supervisors, and for the use of the professional library when she needed it.

She also attended in-service and psychiatric consultation sessions as scheduled. Later in the morning her base of operation became the medical centre, where

she held conferences with patients referred to her by the physicians.

The referrals were based on need for nursing care adjunctive to medical plans. Daily work plans, including home visits were left to the judgment of the public health nurse. Referral of the patient to the nurse was the physician's decision.

Volume and Nature of Services in the Two Projects

In one year of operation of the York project, referrals from the four doctors resulted in service by the project nurse to the total of 203 families.

One-third of the referrals from the doctors were for teaching expectant mothers and mothers of infants and pre-schoolers; two-thirds were for services related to a broad spectrum of diagnosis and involved conditions with some disease component.

One-third of the referred patients were 65 years and over. The age distribution reflects that of the population served. Many health and related needs, additional to the initial reason for referral, were reviewed during nursing service to the families.

These included a need for guidance and nutrition; counselling concerning living arrangements, such as homemaking services, nursing home, home for the aged; guidance in taking medications as prescribed; and for understanding normal growth and development and family relationships. Many of these needs were met by the project nurse; others were referred by her to some other community agency.

In the Contra Costa project, the public health nurse worked with 250 patients and their families in one year of operation. The nurse made 921 teaching, counselling and health co-ordinating contacts in homes and during office visits.

The teaching contacts included interpretation of medical plans into lay language, such as explanation of medications, use of equipment, special diets.

Also included were demonstrations of fundamental nursing procedures to families and patients; explaining preventive aspects of health management, for example, immunizations and family planning; discussion of child growth and development, prenatal and postnatal health; and environmental health and safety. Counselling included reinforcing the physician's medical plan by clarifying and reviewing the orders for the patient and family; assessing the home situation to be sure that the medical plans can be carried out; follow up visits on patients needing ongoing care; supportive listening and guidance in family problems; informing patients of source of special care.

Co-ordination involved relaying information from one agency to another; informing the physician about cultural and family factors in the treatment situation; obtaining health histories useful to the physician; planning conferences with other disciplines to make special care plans as needed; helping families overcome obstacles to care, such as transportation, need for translation, and arranging or clarifying appointments for patients.

In addition to her personal contacts with patients, the nurse has made an additional 243 telephone calls with sufficient content to replace home visits. She has contacted other agencies 194 times, in addition to 234 conferences with other public health nurses on behalf of patients and their families.

Outcome of the Service

In these interim reports of the public health nurses' involvement with practitioners, no data is provided to illustrate whether the physician's time has

been expanded, whether his services were made available to a larger number of patients, or whether the patients actually benefitted one way or another from these extended services.

THE NURSE'S EXPANDED ROLE IN THE HOSPITAL-AMBULATORY CLINIC SETTING

Lewis and Resnik reported on a project at the University of Kansas, in which nurses served as the primary source of care for adults with chronic illnesses in the context of an adult medical out-patient department¹⁷.

Selection of Patients

Patients being seen in the medical clinic of the University Hospital were screened for possible inclusion in the study. Five major diagnostic categories were considered: hypertensive cardiovascular disease; arteriosclerotic heart disease; exogenous obesity; psycho-physiological reaction; and arthritis -- both rheumatoid and degenerative.

Medical criteria were established to ensure that patients accepted were in a relatively stable phase of the natural history of their illness. All patients selected were interviewed with the use of a structured questionnaire, and certain psychological tests were also administered. After completion of initial testing, patients were randomly allocated with stratification according to diagnosis, age, sex and race, into control and experimental groups.

There were 33 subjects in each group. Those assigned to the control group were returned to the regular medical clinic, where they continued to receive care. The others received their primary care for the next year in an experimental nurse clinic.

Method of Operation

The nurse clinic operated in the medical outpatient area. The nurse had her own office and schedule her patients' appointments. Standing orders were written for patients in each diagnostic class. All charts of patients seen by the nurse were seen daily by one of two physicians involved in the project. The study was duplicated in the clinic of a metropolitan general hospital, where patients were seen by private practitioners instead of house staff, medical students and faculty.

The same evaluation procedures were completed for both patient populations and all patients were re-interviewed and retested at the end of one year.

To evaluate the nurse's performance, the investigators used the critical incident technique that has been applied in the classification of physician performance by Sanazaro and Williams. After one year's experience in each clinic, the records of all patients were reviewed to obtain information on death and numbers of appointments missed. From post-study interviews, determinations were made of changes in disability levels, amount of discomfort, frequency of symptoms, and satisfaction with care.

Results

A total of 345 visits were made by the 33 patients in the nursing clinic during the year of the study. On 95% of these occasions, the patients were seen by the nurse alone. On the others, the nurse either requested consultation in advance or called the physician to see the patient at the time of the visit. No patient initiated a request for consultation with a physician. In the control group, 153 visits were made by 33 patients.

Time and motion studies done on both groups at random intervals indicated that the average waiting time for nurse clinic patients was 5.5 minutes, as compared to 58 minutes in the control group. The total time spent in the out-patient department by the patient was about 58 minutes in the nurse clinic, and 97 minutes in the control clinic.

The hospitalization experience of each group was documented: the control group had a rate of 126.1 hospital days per 1,000 patient days of observation; the rate of the experimental group was 34.3 per 1,000 patient days.

On the basis of estimates of the cost per hour of the time of physicians and nurses, in addition to information available on length of visit, total number of visits, total days of in-patient care and so forth, the cost of care for both clinics was calculated. The average cost per patient in the nurse clinic was \$98, as compared to the control where the average cost per patient was approximately \$127.

The number of appointments missed by the patients belonging to the nursing clinic was about half of those missed by the control group.

The charts of patients in both groups were reviewed by physicians at the end of the year of observation. The differences between the two groups were as follows: fewer nurse clinic patients had examinations of the eyes, ears, abdomen and lungs; three times as many nurse clinic patients had pelvic and rectal examinations performed by physicians on referral from the nurse. Routine laboratory screening tests for the detection of latent disease were performed on almost all the nurse clinic patients; only one-third of the control patients had been subjected to this procedure.

Experience in the metropolitan hospital where a similar project was conducted, was almost identical to that in the original clinic at the University of Kansas.

The data presented by the authors suggest that the patients cared for in two separate nurse clinics received care of acceptable quality. The description of the nurses' activities indicated that they were engaged primarily in supportive role functions rather than in the technical, diagnostic and therapeutic activities of physicians.

The investigators suggest that the differences in outcome in the two groups were related not to the patients selected for the study, or to the abilities of the practitioners caring for them, but to the different processes of care emphasized by the physicians and nurses.

The former are more concerned with the biological and technical aspects of diagnosis, and management of disease. Nurses, on the other hand, describe their activities in terms of supporting role functions more consistent with the majority of needs of the chronically ill. The investigators point out that there was considerable concern about the operation of this program by physicians.

The Department of Medicine has now instituted an operational nurse clinic to which staff physicians may refer patients for care similar to that described. However, opposition by all disciplines has merely decreased, not disappeared. According to a recent report, the program of the metropolitan hospital has been discontinued.

THE NURSE'S EXPANDED ROLE IN THE COMMUNITY

The Paediatric Nurse Practitioner

The paediatric nurse practitioner program prepares nurses to assume an expanded role in providing increased health care for children in areas where there are limited facilities for such care, and in the offices of private paediatricians. This program was developed jointly by the Department of Paediatrics of the School of Medicine and the School of Nursing of the University of Colorado¹⁸.

Training Program

Initially, nurses receive approximately four months of intensive theory and practice in paediatrics at the Medical Centre of the University of Colorado, where they have assignments on various wards, clinics and nurseries.

They learn improved interview techniques appropriate for their expanded roles and responsibilities, so their assessment can be more perceptive and pertinent. The nurses become proficient in performing a complete physical examination, including the basic skills of inspection, palpation, percussion and auscultation, as well as in the use of such tools as the stethoscope and autoscope, in order to increase their ability to gather data on which to base their decisions.

The nurses learn about various aspects of parent-child relationships, variations of growth patterns, physical and psycho-social development, the essentials of infant nutrition, and immunization procedures and schedules. They review the dynamics of physical psycho-social and cultural forces affecting health, and develop proficiency in counselling parents in child education practices.

After the four-month training period at the Medical Centre, the paediatric nurse practitioner is placed in field stations in low income urban and rural areas, and in the offices of the paediatricians in private practice.

Independent Role

In the field station, the nurses have office hours suited to the particular population groups in the adjacent areas. In some of the field stations, a physician is present during the hours that patients are seen and so consultation is readily available.

In others, physicians only visit the station once or twice a week when they see patients with special problems. Patients who need immediate medical care when the physician is not in attendance, are referred to an appropriate medical facility.

Nurses always function under the supervision and direction of the physician, even though he may not be physically present at all times. All children are seen by physicians at regularly scheduled intervals, in addition to receiving health care by nurses.

At some field stations, home visiting is necessary to stimulate parents to bring their children for necessary health care; at others, there is less need for visits to the home. Nurses co-ordinate their services with existing community resources, including programs of the city and state health departments, the school health program and others, so as to prevent overlapping, duplication and fragmentation.

The investigators have not made public yet the results of their study of the paediatric nurse practitioners' performance in field stations. Initial statements indicate that the nurse practitioner is able to give total care to more than 75% of all children who come to the field stations.

This includes almost all of the well children, who make up slightly more than one-half of all the patients, as well as approximately half of the children with illnesses or injuries.

Dependent Role

The paediatric nurse practitioner as an associate of paediatricians in private practice, performs functions similar to those carried out in the field stations. Under the tutorage of the physician, the nurse develops a working relationship with parents and children. In private offices, the nurse can deliver almost complete well-child care, as well as participate in the care of the sick child.

Often, the initial workup is done by the nurse, and then the patient is seen by the physician. This allows the physician to serve as a consultant to his own patients, since the nurse will have first taken a complete history, performed a full physical examination, and made a tentative assessment and evaluation with particular emphasis on the differentiation of normal and abnormal findings, and a preliminary interpretation of the latter.

At the initiation of the nurse practitioner into the paediatrician's practice, the physician introduces the nurse to the patients by an informal letter which describes the nurse's preparation and functions and the role she will have in providing care.

The letter encourages the patient to use the services. When patients come to the offices, the nurses are introduced as the physicians' colleagues, and their functions and roles are again explained and demonstrated. Preliminary statements about the role of the nurse practitioner in a paediatrician's office suggest that few patients object to interposition of the nurse between

the doctor and themselves; that young patients accept the nurse practitioner's services more readily than do older children, whose previous experience has been exclusively with the physician.

Many families remark favorably on the skill and thoroughness of the nurse, and are pleased that the paediatrician has more time to spend discussing meaningful problems with them.

Some paediatric nurse practitioners make home visits to homes of newborn infants and give personal attention to mothers of these infants. Nurses handle many of the telephone calls previously directed to the physician, and they are able to answer significant portions of the parents' questions without having to refer them to the physician.

Results

In time and motion studies of practising paediatricians, it has been found that one-half of a paediatrician's time is taken up with well-child supervision, while an additional one-fifth is required for the management of minor respiratory infections¹⁹.

The investigators suggest that paediatric nurse practitioners can perform necessary functions in these areas with skill and competence, and the association of the paediatric nurse practitioner with a paediatrician has been found to be an effective way to increase the provision of comprehensive health care to a significantly large number of patients by wiser use of the professional skills of the physician and the nurse.

The investigators state that physicians, patients, parents and technicians in the offices indicate that the use of the paediatric nurse practitioner does provide increased care to children. Acceptance of the nurse by patients has been "striking". Physicians and clinical specialists (e.g. psychologists) expressed a

"high regard" for the nurse's competence and newly expanded role.

Physicians found that association with the paediatric nurse practitioner provides them with at least one-third more time than they formerly had for patient care, reading, attendance at meetings, and for other purposes. No quantitative data has been published yet to further elucidate the outcome of the nurse practitioner's work.

The investigators suggest that nurses entering the paediatric nurse practitioner training program must undergo a significant role-reorientation, so that they may function effectively in their new positions. They must learn to be confident of their increased decision-making abilities.

They need to break away from their previously established concepts and adapt themselves to a new expanded framework of nursing. The investigators found that this can be done only with separate, structured, formal educational experiences, in a setting which allows and encourages evolution of an expanded role for the nurse.

Self-directed study or on-the-job training is not adequate. The paediatric nurse practitioners have come to regard themselves as highly qualified professionals, ready to assume increased independence and responsibilities for scientific knowledge, and value-judgments in nursing care.

C. THE NURSE AND THE SOCIAL WORKER AS
MULTIPURPOSE WORKERS IN COMMUNITY ORIENTED PRACTICES

Multipurpose workers are persons who undertake to perform the gamut of private and community sponsored health and social services for the wellbeing of individuals or families²⁰.

In essence, the concept of the multipurpose worker is one of extending co-ordination of services for family wellbeing beyond the level of agency co-ordination. It is an attempt to base family oriented health service on personal relationships rather than on impersonal agency goals.

The "family physician", as visualized by Sigerist, is a type of multipurpose worker: "Scientist and social worker ... in close touch with the people he disinterestedly serves ... he directs all his efforts towards the prevention of disease and becomes a therapist where prevention has broken down..."²¹.

The introduction of social workers and public health nurses into health care teams also composed of general physicians, paediatricians, internal medicine specialists, and others was an extension of the idea that these professionals working together could fulfil the ideal description of the family doctor.

The emergence of new types of professionals who combine the qualifications of two or three types of existing professional personnel, is the result of recognition of the overlap of the work of many health professional personnel.

GENERAL MEDICAL PRACTICE USING NON-PHYSICIAN PERSONNEL

Rogers et al report on the experiences gained in a low income isolated area of Pittsburgh, where primary medical care was provided for 2,500 persons by

a physician, a social worker, a public health nurse, an office nurse, a laboratory technician and a secretary²².

Organization

The staff was located in a central "physician's office". Services were available, usually by appointment, from 8:30 a.m. to 5:30 p.m. weekdays. The physician, nurse and social worker were available in case of emergencies 24 hours a day through the use of a telephone answering service. Arrangements were made to utilize two outside medical consultants, a psychiatrist and a podiatrist.

Volume and Nature of Services

During a one-year period, 2,000 persons had 8,076 contacts with the office staff. Eighty-one per cent of these took place in the office; 19% in the home. Seventy-one per cent of the home visits were made by the public health nurse, most of the remainder by the office nurse.

The patients' health problems were classified by the physician into major categories. Twenty-five per cent of the problems fell into the "respiratory problems" category. "Psychological", "skin", "cardio-vascular problems", and "diseases of unknown etiology" comprised about 10% each of the health problems.

Well-baby examinations, as well as pre-and postnatal care formed 5% of the list; the rest of the problems were categorized as "blood", "eye and ear", "neurological", "endocrine" (diabetes), or "musculo-skeletal". Each of these accounted for about 2 - 5% of the total list of health problems.

During the 8,076 visits, 15,171 identified services were given. Partial physical examinations about 30% of these services; prescription of medication under 30%. Counselling and education were offered in

about 15% of the services; laboratory tests in about 8%. Bedside nursing, immunizations, dressings and complete physical examinations comprised about 1 - 5% of the services. During the study year, 10% of the patients required hospital referral for consultation or laboratory services.

Staff Responsibility for Giving Specific Services

Although the physician supervised all personnel no attempt was made to rigidly define responsibilities and duties of individual staff members. Prescription of medications and complete physical examinations were almost exclusively performed by the physician; most laboratory tests were done by the technician.

The public health nurse took major responsibility for half the visits concerning neurological or endocrine disorders; the social worker managed three-quarters of the psychological problems.

Over half the patients seen by the physician and office nurse were below age 20, and were equally divided between males and females. About three-quarters of the patients seen by the social worker were females 20 - 54 years; three-quarters of the patients seen by the visiting nurse were 65 years or older with five times as many females in the group as males.

Community Activities

The investigators made reference to "effective use of public health programs" already existing in the community, and to health education programs to the residents of the area in child growth and development, cancer detection, weight control and others.

Outcome of Services

This study was primarily a descriptive one, and no evaluation of the outcome of services or educational programs is given. It is suggested by the investigators

that the "physician had more time for patients with greater needs" but no substantiation of this statement is offered in this study.

Cost of Services

The estimated "market value" of the services for one year, based on general practice fees of a low income neighbourhood adjacent to the area of the study was estimated at about \$45,000. If the out-patient visit cost of a closeby general hospital was substituted for the costs incurred, the market value of the project rose to \$73,000. The actual cost of the program was \$59,000.

Staff Relations

It is suggested by the investigators that without full membership in the practice group, it would have been difficult for the staff to attain the informal working relationship with each other to assume non-traditional roles, or to accept direct supervision from the project physician.

THE FAMILY HEALTH MAINTENANCE DEMONSTRATION

In the Family Health Maintenance Demonstration Project (in the Bronx section of New York), the social worker and the public health nurse were asked to become multipurpose family health and social caseworkers²³.

Favorable past experience of the investigators with the Montefiore Hospital home care program suggested that joint social-medical decisions to meet the needs of seriously ill patients benefitted the patient, the doctor, the nurse and the social worker.

Since the task of the demonstration was to seek out sources of defect and disability in family life and their inter-relation with illness, both the social worker and public health nurse were assigned to a rather large part in the team operation.

Selection of Patients

The patients participating in the demonstration were part of a larger population of metropolitan families who were subscribers to the Health Insurance Plan of New York, and who were served by the Montefiore Medical Group.

Coverage by medical insurance, the economic factor which figures prominently in many studies of the use of professional services, was effectively controlled. One hundred and fifty families were selected at random from 5,000 families registered in the health insurance plan. Another 100 families were selected by the device of matched controls to be used as a control group.

This group was not exposed to the new medical care system and the added health promotion activities. Both groups were given a baseline evaluation study consisting of history and physical examination by a physician; interview with medical social worker, nursing visits to the home along with completion of nutrition and housing forms; laboratory, X-ray and dental examinations and psychological testing including the Cornell Medical Index.

The 150 special study families were assigned to two health teams, each composed of an internist, a paediatrician, a psychiatric social worker and a public health nurse.

Content of the Social Worker's Job

The social worker was asked to be a "family caseworker", and a team member. She was thought of as a professional worker who had diagnostic and therapeutic skills which might prove useful in assisting other professional workers to do their job, as well as carry out the job of her own.

It was thought necessary for the social worker to be a part of a medical health care team, to meet with

team members regularly, visit and interview families in the same setting as the other team members did, and share her skills with them.

The social worker would share in the initial interviewing of the families. The purpose of these interviews was to obtain information from the patients about their understanding of themselves in relation to their jobs, marital partners and children and to help mark out the areas of tension and dissatisfaction as well as goals, satisfaction and interest.

The social worker made some school visits to fill in the details of impressions about children, and occasionally visited the households as well. She then prepared a diagnostic statement, which amongst others described what the patients knew about themselves, and how aware they were of stresses and strains within the family. Her evaluation of families was presented at team conferences.

In addition, she conducted casework activities with patients who recognized the need for these, and with children who had difficulties in school situations.

Content of the Public Health Nurse's Job

Much like the social worker, the nurse made contacts with families invited to participate in the demonstration. She outlined the background, objectives and goals of the program, explained the procedures necessary, and encouraged the family to consider these factors. The nurse arranged appointments and encouraged the family to complete the baseline interviews and examinations; as often as possible she was present when the doctor examined the family members.

She interpreted the doctor's recommendations and the laboratory findings to the family, and arranged for further examinations or studies as necessary. In

many ways she acted as a catalyst and expediter of the initial processes of the introduction of the family into the demonstration.

The nurse carried out home interviews to discover the general eating habits and patterns of the family, and specific details of food idiosyncrasies of the various members. She also obtained information about the sleeping habits, rest, recreation, leisure and work or school activities; made periodic home visits, helped with budgets and menus, advised on family problems, and made herself available for such consultations in the home or office as might be desired or requested.

As part of her therapeutic role, the nurse was present in the doctor's office as often as possible to assist him and speak with parents and patients after each visit, interpret and assist in carrying out the doctor's orders.

She visited the home when there was sickness and gave treatments or passed on information to the doctor. With the exception of the "medical" role, the areas of activities of the social worker and nurse overlapped.

Utilization of the Social Worker and Public Health Nurse

It is evident that in the Family Health Maintenance Demonstration, both the social worker and the public health nurse were considered to be team members, rather than specialists or consultants. Initially in the program, it was planned that patients having emotional difficulties were to be helped by whatever professional they wished to consult.

The staff member they sought out could obtain such consultation or supervision as he wished from the other workers of the program, and from the consulting psychiatrist. The social workers were chosen by few patients; even when it was decided that the patients

would be referred to the social worker, few patients would accept the referrals. The investigators do not indicate the refusal rate, but suggest that the social workers were being utilized less than the staff thought was appropriate, given the need for counselling.

An average of 23% of the study families utilized the services of the social worker during the four-year period of the project. In comparison, 59% utilized the services of the physician, and 41% those of the public health nurse.

The utilization of physicians' services by study families was almost twice that of the control families. Silver suggests that this does not reflect abuse; that better case finding and annual examinations enter into the calculations. He also points out that where a study family used most services, they made less frequent use of specialists to obtain diagnoses.

In comparing the utilization of the various services, it appeared that physician utilization reached its highest point in the middle class families, whereas the social worker was utilized more by the families of the upper middle classes, and public health nurse was utilized most by middle and lower class patients.

The nurse was used a great deal more by those families with less education, and the social worker was used as much by medium educated families as by low educated ones.

The average utilization of services also varied by family role: parents utilized the physician's services by at least one-third more than the services of the social worker or nurse. In the younger age group, the utilization of the social worker was lowest in the 13 - 16 years age group and highest in the 6 - 12 years old group. The utilization of the nurse was highest in the children under six years of age.

Adult women tended to utilize more services of all the team members than adult men, whereas the utilization was identical for female and male children.

The Cornell Medical Index was found to be a good indicator of potential use of services: a positive correlation between high numbers of "yeses" on the Index and high utilization of services was confirmed by the study.

Outcome of the Social Worker's and Public Health Nurses' Services

In order to assess changes in the physical health and adjustment of the study families, tests were given both at the initiation and the conclusion of their participation in the Family Health Maintenance Demonstration. The public health nurse evaluated matters that were assigned to her area of competence: nutrition, sleep, rest and housing; certain aspects of personal adjustment.

The social worker evaluated the functioning of the family with special emphasis on work, relationship between husband and wife, parents and children, and the utilization of special community resources.

In a comparison of the study and control families, the evidence of benefit to the participants in a measurable way appeared to be clearcut in some important areas, indecisive in others. There was some evidence that the study families were physically healthier at the end of the program; slightly more of them were judged healthy than were the control families.

In the domain of the public health nurse, some improvement in nutrition was detected in the study families. Such areas as sleep and rest or educational achievement of the children reflected no greater improvement amongst the study families than amongst the control, and the difference in recreational adjustment was found

to be insignificant. Considerable improvement was found, however, in the area of housing.

In the domain of the social worker, some deterioration was recorded in areas of personal adjustment and family relationships, while some improvement was noted in occupational adjustment. These changes have closely agreed with changes also occurring in control families.

The investigators cannot give satisfactory explanations for the absence of evidence of improvement in the emotional area, and actual deterioration in certain areas, vis-à-vis the control families.

The findings of the Family Health Maintenance Demonstration indicate that in carrying out her tasks, the public health nurse was fully acceptable to the families as an aid to the physician, even as a substitute; the social worker was considered somewhat less so. To the patients, the doctor was the top of the professional hierarchy. The nurse was considered a practitioner, a step below the doctor, taking orders from him and responsible to him.

This position was not unsuited to the nurse's conception of her own role, and there was no area of conflict between the doctor and the nurse, or nurse and patient. The social worker tended to be excused from this hierarchial structure, because she dealt with emotional difficulties and problems which were not as yet included in the popular mind, as part of the area of medical need.

Silver suggests that there is a clear necessity for the development of "family casework" closely related to medical practice, particularly to help people see their own need in the family situation. He suggests that if casework is necessary because of patient needs, perhaps it ought to be added to a public health nurse's

qualifications, since the nurse is accepted so well by the families. By broadening the capabilities of the nurse, it may be possible to carry on the desired activity without adding a social worker to the team.

THE NURSING CASEWORKER

The work of a multipurpose "nursing caseworker" in a co-operative clinic in Prince Albert, Saskatchewan was described in 1966²⁴. The nurse, who had university postgraduate training and psychiatric nursing experience, served a seven doctor group practice as a correlating centre for total care of patients.

The Nursing Caseworker's Duties

- i) Investigation of social environment of patients under the physicians' care.
- ii) Visiting patients when no immediate medical attention was needed, but the presence of a medically oriented professional was required.
- iii) Surveillance of the continuity of care.
- iv) Counselling -- including personal adjustment problems, nutrition, housing, etc.
- v) Referral to other agencies.
- vi) Educational programs for arthritic, diabetic, obese patients; sex education programs for parents.

Volume of Services

In three years, a total of 835 referrals were made to the nursing caseworker. These referrals generated 5,972 visits of which about 28% were made in the home; 30% in the office; and 42% in hospital.

Outcome of the Services

The author states: "there is sound basis for a statement that the patients' length of illness is shorter and also, that these patients may have fewer and shorter hospitalizations as a result of this support at home".

Unfortunately, this study is entirely descriptive, and no substantiation of the above statement is offered.

THE FAMILY HEALTH WORKER

The family health worker is a "multipurpose worker" trained with nurse-aide and social-advocacy skills, working with a team of physicians, nurses and other health personnel²⁵.

The family health worker fulfilled three co-existent needs in some poverty areas of the United States:

- i) from the point of view of health centres established by the Office of Economic Opportunity in low income areas, the need for medically oriented manpower was acute;
- ii) from the point of view of the community, creating new jobs through training of new health workers has assumed an even greater importance;
- iii) from the point of view of individuals and families, there existed a need to bridge the cultural barrier to the health professionals.

The family health worker trained in the Bronx area of New York may serve as the example of the various types of socio-medically oriented multipurpose health aid.

The family health worker's base is the health centre which may be serving 30 - 50,000 members of the immediate community. The family health worker spends most of her time in making home visits in the community, where she is assigned from 20 to 40 families. The worker is part of a team consisting of a physician, nurse and family health worker.

Her day to day supervision is by the public health nurse on the team; overall supervision and continuing inservice training is the responsibility of a family health worker supervisor who is usually a public health nurse assigned to the training program.

Activities

Health education: The family health worker may instruct the new mother on how to bathe and feed the baby; she alerts the household to hazards: fire traps, broken paint on walls, and the like. In her training, strong emphasis is placed on patient education, case finding and the preventive aspects of medical care and the emotional factors influencing illness.

Patient care: The worker's patient care activities include checking of vital signs, such as respiration, blood pressure, pulse on patients with known hypertensive or other conditions; instructing the family in the care of bedridden patients, such as bathing, skin care, changing dressings, irrigating catheters, etc.; carrying out exercises prescribed by a physiatrist; checking of new diabetic patients to make sure they understand how to check urine and that they are following a prescribed diet. The worker is also able to collect mid-stream urine specimen and to collect venous blood samples.

Social advocacy activities: During the course of her home visits, the family health worker deals with a variety of social and environmental problems -- assisting a patient with heart disease to obtain a telephone through welfare, obtaining more suitable low income housing for a large family, and other similar activities.

Method of Operation

Every morning the health worker meets with her public health nurse supervisor to go over her daily assignment. Once a week she meets with the physician, public health nurse, lawyer and social worker at the health team conference. Here, they develop a health plan for each family seen in the past week.

The family health worker spends several hours a week under the direct supervision of the training staff, continued or inservice training in her work toward other educational objectives, such as achieving a high school diploma.

Training

The family health worker's training is for eight hours a day for 24 weeks. The first eight weeks of the course consist of the core curriculum which covers basic health skills, a survey of health care areas, community resources and remedial training in English, mathematics, and science. The remaining 16 weeks are divided so that two-thirds of the time is allotted to health skills and one-third to community resources.

Health skills are taught by nurses; the community-resources part of the training is taught by the lawyer who is a member of the training staff. Seminars are given by social workers, health educators, anthropologists, internists, paediatricians, obstetricians, psychiatrists and rehabilitation therapists.

Volume of Services

The audit for one month of the Montefiore Hospital Neighbourhood Medical Care Demonstration indicates that a total of 2,310 patients were treated there, resulting in 2,375 professional contacts. Five hundred and fifty eight or 24% of the patients in that month were treated in the home by family health workers. Physicians and public health nurses treated 76% of patients in the centre, public health nurses accounting for 11% of that total.

Outcome of Services

The family health worker's contacts extend to a group larger than that visiting the centre: they

contact proportionately more patients in the 16 - 40 year old group than that coming to the centre; and see more adult male patients in the home than that reflected in the centre visit activities.

The value of the family health worker appears to be largely dependent on the similarity of her own cultural level to those in the community. Placing an emphasis on interpreting the Medical Centre's program to the community, and the needs of the community to the professionals, has been a feature of the demonstration.

Long-term evaluation of the family health worker program is underway. Whether neighbourhood health centres with family health workers and other specially trained professionals can alter the general health picture of the community is yet to be resolved.

D. EMERGING ROLES IN AMBULATORY PATIENT
CARE SETTINGS

Two new types of health care personnel training programs have been initiated in recent years in the United States. Both are being conducted with a view to producing an "assistant" or an "associate" to the physician. These personnel would be qualified to assist the doctor and capable of performing skills currently practised by doctors, nurses and technicians.

THE PHYSICIAN'S ASSISTANT

In 1965, Duke University Medical Centre proposed a training program for the establishment of a physician's assistant²⁶. This assistant was seen as a new category within the structure of the health field, designed to provide career opportunity for men functioning under the direction of doctors and with greater capabilities and growth potential than informally trained technicians.

The situation which generated the idea of the physician's assistant has been set forth by Stead: "personnel in the health field are too few in number and inadequately trained to meet the demands placed on the medical profession ... medical schools and nursing schools as presently oriented cannot supply sufficient numbers of doctors or career-oriented nurses to meet this demand. Furthermore, no workable solution to this problem can be predicted solely on reshuffling of the available talent"²⁷.

It was proposed that these individuals would be trained to assist the doctor in his clinical or research endeavors in such a way as to facilitate the utilization of available physicians and nurses. Seventeen men have completed training now, and 24 men and women are currently in training. The impact of this individual on the quality and cost of medical care is now under study.

Functions

Graduates of this program are viewed as individuals capable of performing responsively and reliably, certain of the skills currently practised by doctors, nurses and technicians. In patient areas, the physician's assistant learns to take patient histories, do physical examinations, start and regulate intravenous infusions, intubate the intestinal tract, perform lumbar punctures and other procedures usually performed by the doctor.

He is trained to monitor vital signs, give medications and keep progress records as usually performed by nurses. He is also taught to operate certain diagnostic and therapeutic instruments, such as ECG machines, respirators, cardiac monitors and defibrillators, as well as to carry out some laboratory studies as commonly done by technicians.

Graduates of this program will be potential employees in many areas. They may be employed by a physician or group of physicians away from the medical centre. Within the Duke University Medical Centre, graduates are needed in research laboratories, clinical areas, diagnostic laboratories, the renal dialysis unit and the hyperbaric chamber.

The role of the graduate is not yet legally defined, but an effort is being made to do so.

Training

Admission requirements to the program are as follows:

- i) high school diploma or its equivalent;
- ii) experience of at least three years in the health field, such as a medical corps man or a licensed practical nurse;
- iii) successful completion of various interviews and personality tests.

The curriculum is divided into two phases. The first phase is "pre-clinical": it includes a review of the history, philosophy and ethics of medicine; introduction to laboratory procedures; medical terminology and administration; animal surgery; anatomy and physiology; pharmacology; metabolism; advanced laboratory procedures; study of clinical medicine, community health and physical diagnosis.

The second phase is "clinical": it includes a month each of supervised exercises in defined areas of disciplines in the medical centre and surrounding hospitals and clinics. Rotations are divided into required and elective areas; the latter dependent on the student's interests.

The required rotations include out-patient departments in emergency rooms; intensive care units; cardiology; hyperbaric; nephrology; ophthalmology; paediatrics and others. The total curriculum is two years in duration.

THE CHILD HEALTH ASSOCIATE

A program is now being developed at the University of Colorado, to train an entirely new category of health professionals: the child health associate²⁸. This new professional will receive a course of training which will be completed in five years after high school, as compared to the approximately nine years needed for a general practitioner, and about eleven years for a paediatrician.

It is suggested that the child health associate will have the knowledge to provide complete care for 80 - 90% of the ambulatory patients seen in paediatric practice. It is forecast that the child health associate will have far greater capability and growth potential than any of the allied health professionals now serving the public, and with problem solving and decision

making capabilities in certain areas of practice which will closely approximate those of the physician.

The child health associate will work with physicians in providing comprehensive, diagnostic, preventive and therapeutic services to children.

The child health associate training program is in its initial phases of development.

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TASK FORCE ON PRICE OF MEDICAL CARE

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Dr. Robert G. Wilson,
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SUMMARY AND RECOMMENDATIONS

Recommendation 1:

Medical associations and medical educators should conduct studies to determine how many physicians are really needed in Canada, and especially the numbers and proportions required in general practice and the different specialties. While inadequate numbers may imperil standards, too many doctors could result in increased costs.

The impact of universal medical insurance on medical education could be disastrous if teachers are made to earn from patient care their incomes for teaching research and administration. These aspects of their work must be adequately rewarded by university and hospital stipends and other grants. It is recognized that full-time clinical teachers must see patients in order to teach, and that they will be in demand as consultants because of their special skills and experience.

Recommendation 2:

That full-time clinical teachers should properly charge fees for their work as consultants, but should be under no financial pressure to seek practice.

Recommendation 3:

That the teaching, research and administrative activities of part-time teachers should be financed by the universities and hospitals, because those teachers play a most important role in educating students of Health Sciences.

The task force is not in favour of staffing arrangements consisting entirely of "full-time" teachers, because the practising physician, dentist and nurse are required to engender a suitable atmosphere of

realism. These individuals will be primarily oriented to patient care, and will derive their income primarily from patient care.

Recommendation 4:

That a special study should be made of the various methods used to pay "full-time" and "part-time", teaching staff in the Health Sciences.

Recommendation 5:

That whereas some students with the potential to become good doctors are being deterred from studying medicine by financial considerations, and to encourage young people to enter a career in medicine, medical students should receive the same grants from government as other comparable students taking higher degrees. These grants could be made in the form of scholarships or loans.

Recommendation 6:

That medical school and other health science curricula should include some training in the economics of health care, aimed at encouraging in physicians and others a sense of responsibility for the costs of medical and hospital care. Such teaching should ideally be given by the student's own clinical teachers at the same time as clinical instruction.

Health care costs in Canada are rising rapidly, and the general inflationary trends in the country are a significant factor in this rise. Increases in physicians' net incomes are less responsible for the rise than are increases in hospital costs, and certain other costs.

Recommendation 7:

That physicians' incomes should compensate for the cost of their training. The net cost to the individual of training as a

general practitioner is estimated at \$26,000, as a specialist \$80,000. There is an additional cost borne by the community for training a physician of at least \$45,000.

Recommendation 8:

That physicians' annual incomes should be adequate to compensate for their relatively short working life. For example, cardiac surgeons and neurosurgeons seldom can work to full capacity for more than 25 years. The exigencies of all forms of modern medical practice do not allow most physicians to practice full-time for longer than 35 years. They should earn enough during this period to enjoy comfortable retirement when their capacity for work has diminished.

Recommendation 9:

That because in general, the value to society of equally well-trained and hardworking doctors in the different branches of medical practice is similar, the average, net, life-time earnings (after income tax) of doctors in general practice and the various specialties should also be similar.

However, because of differing length of average working life, annual incomes may differ significantly. (It is recognized also that emergency work, irregular hours, and unpredictable working schedules, etc., are more frequent in some branches of medicine than in others, and merit greater reward.)

Fee schedules should be designed to produce this equitable similarity in average life-time earnings. The task force recognizes, and approves, the fact that within a given branch of practice there will continue to be wide variation of income between the busy and the less busy physician.

Recommendation 10:

That whereas Canada is in competition for physicians with the United States where earnings have tended to be higher, and that whereas certain provinces, such as Saskatchewan, New Brunswick and Newfoundland, have difficulty in attracting physicians, remuneration to physicians must aim to compensate for these factors, if good medical care is to be available throughout Canada.

An unsatisfactory distribution of physicians through Canada tends to give the impression of a worse shortage than actually exists.

Recommendation 11:

That remuneration to physicians must aim to encourage optimum proportions of general practitioners and all kinds of specialists in Canada as a whole.

Recommendation 12:

That a fair remuneration to physicians should be based on their professional net income before taxes. The physician in private practice does not have the fringe benefits of the employed person such as holidays with pay, group pension plans provided totally or in part at employer's expense, sickness and disability pay, and possibly other benefits.

At the present time, about a quarter of all Canadian physicians are paid by salary for most of their work. Only a minority of those paid by salary are engaged in rendering personal medical services. Salaries for doctors are a suitable form of remuneration only when their work-volume is predictable. Salaries are not appropriate for competitive private practice in Canada.

The capitation method of payment may be suitable for large clinics supplying almost total care for their patients.

Recommendation 13:

That medical care insurance plans in Canada should be prepared to experiment with capitation payment to clinics who prefer this method of remuneration.

The fee-for-service method of payment is not only traditional, but the most practical method for all personal medical services in Canada. It carries the advantage that detailed quantitative measurement of each physician's work is possible as a by-product of submission of individual claims, but also carries the disadvantages of complex administration by insurance plans, and relative unpredictability of total costs.

The use of fee schedules prepared by the various provincial medical associations to determine the insurance payment for each service has become firmly established.

Recommendation 14:

That attempts to introduce uniform preambles, nomenclature and format to the various schedules, at the same time as simplifying them, should be renewed. Furthermore, an alternative fee-for-service system, not involving use of a schedule (such as DIFAM), should be given a broad field-trial.

Recommendation 15:

That accurate up-to-date information on the average net incomes of physicians in full-time practice (general practitioners and all types of specialists) in various locations in each province must be used in order to develop rational fee schedules. This information has not been available in the past.

Government-sponsored provincial plans should make available to medical associations full data regarding frequency and costs of medical services and ranges of gross payments to (or on behalf of) doctors in the various specialties and geographic areas. Data on gross and net income and expenses of practice should continue to be gathered by the Department of Health and Welfare and the Department of National Revenue and should be adjusted by considering the doctor-population ratio in various specialties and provinces, and also by taking into account geographic peculiarities of the province.

Interprovincial variation between schedules is acceptable, but regional variation within a province produces problems.

Recommendation 16:

That special bonuses should be paid in order to attract physicians to less attractive locations.

Recommendation 17:

That fee schedules should be revised at intervals of about three years in order to keep physicians' net incomes in line with the general economy and also to adjust for changes in patterns of practice and increases in overhead expenses. Before each revision is undertaken, the total percentage change in physicians' net incomes (before the payment of income tax) which the new schedule should bring about should be discussed, and if possible agreed upon, by the provincial medical association and the insuring agencies.

Recommendation 18:

That once fee schedules and overall costs of physicians' services have reached an acceptable level, further changes should be based upon agreed economic indices, so that fees and costs move in proportion to the economy of the country or province. Various weightings of the Consumer Price Index and the Index of Average Weekly Wages and Salaries have been suggested, but further study is required to find the most appropriate formula. The effects of the application of any formula must be examined regularly.

Recommendation 19:

That within the agreed change in total fees, the allotment of individual changes to fee items and assessment rules should remain the responsibility of the medical associations. They should use statistical data supplied by the insurance plans in order to bring about desired average net income adjustments in various specialties, remembering that the incomes are influenced both by increases to individual items in the schedule and by changes in utilization of services. The adjustments should take into consideration the physician's training period, working life, practice costs and potential, and aim at keeping a desirable distribution of general practitioners and specialists in the province.

It is undesirable that governments should legislate medical fee schedules. No other professional or technical body, not even direct employees of government, has its fees, salaries or wages legislated by government. While government medical care plans should be free to pay their own schedule of benefits and not be bound by law to the medical association's schedule of fees, it is hoped that, if the above guide-lines in developing fee

schedules are followed, the government's and the association's schedules will be identical.

While medical associations cannot legally enter into an agreement which binds their members, in actual practice they can enter into agreements which the vast majority of their members will abide by. Needless to say, if there is an agreement between a plan and an individual physician, the physician must accept and abide by the terms of the agreement. No physician should be forced into such a commitment.

Recommendation 20:

That the right of physicians to charge more than an insurance plan's schedule of benefits should be retained. However, if the doctor is prepared to accept direct payment from the plan, he should accept the plan's payment as payment in full except when he has informed the patient before rendering the service that there will be an additional amount for the patient to pay.

Recommendation 21:

That physicians' payments may be discounted to a previously agreed percentage of the fee schedule, but a proration of payments which varies from time to time, depending on the volume of services rendered and the funds available, is highly undesirable.

Recommendation 22:

That public medical care insurance plans should aim not to insure luxury care or unnecessary services. All public plans should have medical review committees which include practising physicians to consider these matters and to make appropriate recommendations to the plan.

Recommendation 23:

That studies should be conducted to determine whether the total costs of care for certain diseases are less or more expensive when managed by a specialist than when managed by a general practitioner. The studies should compare these relative costs in urban and rural locations and in locations with high and low concentrations of specialists.

Recommendation 24:

That medical care insurance plans should not insure experimental surgical procedures, such as cardiac transplantation, nor pay for mass procedures such as multiphasic screening until their value has been proven. Investigation of such new procedures should be financed from specially allotted research funds, prior to their general adoption or rejection.

Recommendation 25:

That medical care insurance plans should cover the services of allied medical personnel working under the direction of practising physicians, such as public health nurses, social workers, physiotherapists and dietitians. Accounts for their services should be appropriate to the status of the person rendering them if a fee-for-service method of payment is used. However, payment by salary may be more suitable under most circumstances.

Many laboratory procedures can be done in different ways at varying levels of cost. New high-volume and "instant methods" of performing laboratory tests with automated equipment carry a lower cost-per-test than traditional manual methods.

Recommendation 26:

That fees charged and payments made for laboratory procedures should be related to the method used. It should be noted that automated laboratory equipment is expensive and its cost must be met from the fees and payments.

In the rendering of services by a laboratory or in radiology there are three elements to be considered. These are (a) the professional components (b) the overhead, including salaries of staff and (c) the capital investment. In determining fees for services in this context these three elements should be separately considered. This applies to both public and private establishments.

Recommendation 27:

That all radiological facilities and laboratories, to be eligible for payment except for the simpler procedures, should be subject to inspection and approval. This function should be carried out by the Provincial College of Physicians and Surgeons or other appropriate body. The fact that a laboratory is owned or operated by a physician or located in a hospital or public health unit is not a sufficient guarantee of quality.

Recommendation 28:

That when a patient is to be admitted to hospital for elective treatment, the necessary investigations should be carried out prior to admission and not be repeated unnecessarily. The facilities of clinic and group practices in particular may lend themselves to satisfactory performance of such investigations.

Recommendation 29:

That in provinces where the government operates both medical and hospital insurance plans, there should

be no competition between them to save costs for one at the expense of the other plan. These agencies should cooperate to the full.

Recommendation 30:

That patients be notified of sums paid directly to physicians by insurance plans because this is thought to have some effect in controlling abuse and unnecessary utilization. For the plan to send its payments to the patient, leaving the patient to pay his physician, may constitute a further control. The latter method is, however, administratively expensive and not always satisfactory to the physician.

General patient participation of the kind in which every patient pays part of the cost of his own medical services (in addition to premiums) through deterrent fees, deductibles, rebates, limitations, etc. may be necessary under certain conditions, but there is no single method which is applicable to all situations. Before any method of patient participation is adopted, its effect on the plan, on physicians, and on patients of all kinds of economic or health status, should be examined, to ensure that no discrimination occurs. Some methods discriminate against general practitioners among the physicians and against the poor among the patients.

Utilization may to some extent be controlled by administrative methods which do not involve patient participation. Physicians who habitually overservice their patients can be detected statistically and paid at a rate lower than normal. Similar restrictions can be put on patients who abuse their insurance. Instances of servicing or utilization patterns sufficiently different from the average to be detected by the statistical methods used in the past have proved to be infrequent, and their control has made little impression on total costs. (Windsor Medical Services cut their costs by 3% through

taxing claims in 1967.) Nevertheless the knowledge that review of patterns of practice and utilization is being undertaken regularly may have a restraining effect.

Recommendation 31:

That medical care plans should appoint medical review committees, manned by practising physicians, to initiate and continue studies of patterns of practice and utilization. Excessive use of laboratories and other diagnostic services should be included in these studies.

Recommendation 32:

If there is evidence that certain physicians or certain members of the public are guilty of overuse or abuse, the services should be paid for by the plan at a lower rate. This is better than for the plan to cut all payments indiscriminately through the introduction of general patient participation. It is also better than for the plan to refuse to accept a reasonable increase in a fee schedule because of increased costs through excessive utilization. Strict control of wasted funds means that the physician who is honestly concerned about costs still gets paid in full, and the patient who does not abuse his insurance still gets comprehensive coverage.

Recommendation 33:

That since Canada could provide an ideal setting for controlled studies in medical care insurance, it is recommended that the federal government encourage the provinces to introduce some variety into their medical plans until one or other method of providing insurance has demonstrated its superiority.

Recommendation 34:

The Task Force on the Price of Medical Care should continue to meet, if necessary, at intervals after the presentation of this report. Specific

topics may be allocated to it. An early one might be discussion of physician training with the Association of Canadian Medical Colleges and the College of Family Practice in order to bring about a better distribution of physicians of all types throughout Canada, and a better understanding of the economics of medicine. A study on the methods of payment for teaching staff might be included.

1. EDUCATION AND MEDICAL CARE

It is not possible to talk effectively about the payment of physicians before knowing how many physicians will be trained for practice in Canada. So far medical schools have trained as many students as possible, but they have not generally related their programs to demonstrated need.

The assumption has been made that the country needs more doctors, without any serious examination of whether the statement can be substantiated. It is, of course, very difficult to decide exactly how many physicians, and other staff in the health field are really required.

The general assumption about the supply of physicians is that the ratio of physicians to population should be about 1 in 800 or 1 in 900. As MacFarlane et al³ pointed out, during the Second World War many Canadian physicians were overseas, with the civilian population being served by 1 physician per 1,177 persons, with no resultant deterioration in morbidity or mortality rates. And when all these physicians returned in large numbers to civilian practice there was no obvious improvement in the usual morbidity or mortality indices. Possibly some differences could be shown if we had more sensitive standards of measurement of the state of health or disease of the community.³

In addition to studying total physician-population ratios, medical schools and governments in Canada have not yet seriously considered the planned needs for different types of specialists in the country.

Quite clearly, the number of people trained in a special field should bear a close relationship to the need for people in that speciality. On the other hand, in a free society the flow of people to a specialty can best be brought about by an improvement in working

conditions and incomes in the specialties for which candidates are required. Fee schedules and methods of payment have direct relevance to the fulfilment of these needs.

The public need doctors and in Canada there is no lack of potential students for entry to medical schools. In an economic sense, in a free market economy, as supply decreases, prices tend to rise. If the number of physicians do not keep up with demand, their fees tend to increase. But as patients cannot pay, we have increases in fees and governments apply tax-moneys to pay for physicians' services.

At this point, governments take an increasing interest in the methods for paying physicians. The provision of such sources therefore becomes a social problem, transcending the relatively simple laws of supply and demand.

At the present time in Canada, after having greatly stimulated the development of hospital beds and other health facilities since 1948, the federal government has recently limited moneys made available under the Health Resources Fund. This limitation of funds to \$37.5 million in the current year has had a chastening effect on the extension of medical and nursing education.

In the same breath, the same politicians ask for an acceptance by the provinces of Medicare, which places a heavy load on existing trained personnel. In other words, universities and medical schools are to be forced into working miracles, an activity in which they have hitherto shown no competence.

It would appear that the medical academies and research workers in our educational institutions have not adequately communicated with the politicians, while the latter appear have a remarkably naive approach to the educational process. Modern medical education is much more complex and difficult than is commonly realized;

and it costs a great deal of money, not only in terms of buildings and equipment, but in terms of people, many of whom must be paid and attracted both to come to Canada and, having arrived, to stay in this country.

The statement of the gross number of physicians in practice is not adequate when discussing supply of physicians. The whole matter of physician supply must include:

1. Type of physician: clinician, laboratory, scientist, administrator.
2. Location and type of practice.
3. Recruitment of persons to enter medical studies.
4. Training capacity of the system: medical schools, hospitals, research institutes.
5. The costs of such training.
6. Retention of physicians in Canada: retirement, death rates, emigration and immigration.

Having done this, the productivity of the physician must be studied in terms of private, hospital, clinic or group practice. In this grouping the following items must be studied individually:

1. Limitations to production due to organizational and institutional controls.
2. The influence of technology on practice.
3. The influence of physician mobility by area, province or country.
4. The availability of physicians as modified by cultural, geographic and economic factors.
5. The use or misuse of auxiliary professionals.
6. The rate of substitution of functions undertaken by other health professionals, formerly undertaken by physicians.

From the point of view of the user of physician services, one must distinguish between need and demand, as these are not synonymous concepts. At present we are concerned mainly with demand which is influenced, at least by the following factors:

1. Age, economic and educational level, and to some extent, racial group of the recipients.
2. The availability of physicians, hospitals and other health services.
3. The dissemination of health information.
4. Social legislation and government financing.

All these variables may be rapidly changed by:

1. New scientific and technical discoveries;
2. the setting of different standards of need and quality
and
3. changes in the utilization of high cost facilities such as hospitals.

According to Knowles² the following changes have taken place in regard to physicians' services in the United States during the last ten years:

1. The numbers of active physicians have increased, exceeding the relative growth of the population.
2. The productivity of the individual physician has increased, at an average annual rate of 4 per cent per annum, by the use of auxiliary personnel and improved technology and operation. Presumably this is true also in Canada.
3. Over the past 30 years, physicians' services have increased per person.
4. The number of patients seen by each physician per year has increased.⁴

5. The proportion of physicians in the total health worker group has fallen in the United States.
6. Knowles points out that whereas in 1900 the number of supportive personnel behind each physician was 1, it is 13 today and estimated to be 20 to 1 by 1975.
7. While group practice should be more appealing in terms of advantages to both physician and patient, it is not markedly increasing in the United States.

The Private Costs of Education and Lifetime Earnings of Physicians and Comparable Professions

Kieferle¹ has provided information on lifetime earnings of physicians, private costs to such individuals for their education, and relevant comparisons with other university-trained people.

From these tables (all tables referred to appear at the end of the report) the following preliminary conclusions may be drawn:

1. The standardized lifetime earnings in general practice come to \$680,530, medical specialties, \$875,847, and surgical specialties, \$1,001,829. (These figures are preliminary and open to correction).
2. The estimated private costs per student to produce a general practitioner come to about \$25,500 as against about \$79,500 for medical and surgical specialists. (These latter figures need correction, as they were drawn from 1966 data. At present interns and residents have had salary increases).
3. The commitment from government to educate a medical student is about \$45,000. This means that total costs to produce a general practitioner are about \$71,000 as against a specialist at about \$125,000.
4. The cost of producing physicians is clearly of importance in determining, at least to a certain extent,

what such physicians will, or should, earn. When the student bore all the costs he had to be subsidized by his parents and he had to borrow money or earn as much as possible during his years of study. During recent years, however, student loans have become easier to obtain in Canada, as a result of excellent government programs.

The Payment of Teachers in Medical Schools

Until a few years ago, in Canada, teaching staff in medical schools were employed under two separate systems. Teachers in the preclinical departments were mainly full-time, with salaries paid by the university. Clinical teachers in hospitals were very often part-time, with a great deal of private practice.

Usually they were not paid much by the university but they enjoyed access to hospital beds which provided some compensation for their teaching services. They also did a great deal of free work on indigent patients.

Starting in 1959, prepaid hospitalization provided care for all patients. The lines between "ward" and "private" patients started to melt away. With the introduction of more prepaid care for physicians' services large sums of money have been made available for medical services rendered to patients who previously were treated free by the medical profession. This means that large sums of money are going into teaching hospitals to the full-time and part-time teaching staff.

The disposition of such funds is variable. The volume of such funds in each specialty is markedly dependent on the particular fee schedule in use. This means that clinical departments have relatively large sums of money at their disposal and it is a matter of considerable discussion to determine ownership of such funds.

On the one hand, the people who do the clinical work should get the money, because they do the work. On

the other hand, they increasingly function in hospital or office facilities provided from community tax money, and they get patients more readily because of their university work and affiliation.

The total situation currently means that teaching clinicians have access to large sums of money, either for their personal use or for their departmental use, while the non-clinical departments have only the usual, rather attenuated university funds.

Similarly, the clinician interested mainly in research generates little or no "patient" money. This means that he is "carried" by the clinicians in his department. Psychologically this type of situation may add to a downgrading of research and teaching as compared with active patient-care.

Obviously, in a university, all these elements are of equal importance in training future practitioners and investigators in medicine: service, teaching and research.

This being the case, it may become increasingly more difficult to hold clinical teachers in full-time posts, if their part-time colleagues are making vastly larger incomes, with minimal teaching and research involvement. The potential for such increasing incomes has been greatly increased by fee-for-service medicare payments, generated by government.

It should be clear to all that financial mechanisms should be developed which will encourage teaching and research in health sciences centres. If this is not done, such activities will deteriorate, with devastating results on the quality of physicians produced from our teaching institutions.

A great deal of discussion is currently going on concerning limits to the incomes of geographic full-time clinical teaching staff. If such limits are set too

low, the most competent clinicians will not accept teaching positions, while if they are set too high, even the keenest teachers may be tempted to neglect their teaching and research duties in order to reach their "ceiling".

Other members of staff may demand their "ceiling" even if they do not make an adequate contribution either in terms of research or patient care. In this way the "ceiling" may easily become the "floor".

And in the background we find the wealth of the United States, which may draw clinicians and other medical teachers away from Canada. There is no doubt that Canada can compete with this situation, by offering incentives to those people interested in teaching and research. Such incentives may be more in the direction of research facilities and funds, than in personal salaries. In order to bring this about there must be considerably better communication between the universities and governments.

At the moment there is inadequate meeting of minds here and the initiative for such better understanding must come from the universities who have not quite realized that they now must learn to justify their needs for funds in a competitive world.

In the field of medical education, we know that there has been a slowing down of available money recently. Universities have not been given the money they have requested. Hospitals are having their budgets reduced and health departments are allowing only small increases. This period of re-examination is probably all to the good.

What is needed is considerably more realistic planning in health sciences facilities. The separate components of the health services must coordinate with teaching, research and service activities.

Finally it should be clearly emphasized that Canada should produce more of its own physicians. Young men and women of adequate capacity who have grown up in this country should be our physicians of the future. It is unacceptable that Canada should become increasingly more dependent on immigration for its physicians, as has been the trend, particularly during the last three years.

2. THE MORTALITY OF PHYSICIANS

If we discuss lifetime earnings of physicians, as we have done in the previous chapter, it is appropriate to examine mortality data on members of the profession. Unfortunately we have no data on this for Canada, but we do have figures from the United States and the United Kingdom.

Two excellent papers have been prepared by Louis I. Dublin and Mortimer Spiegelman^{1,2} on the longevity and mortality of American physicians, 1938-42, and on specialists. These figures would be of general application to physicians living under similar conditions in other parts of the world.

In Table 5 the expectation of life for these physicians is shown. It is based on the physicians belonging to the American Medical Association, of which there were 175,159 living on July 1st, 1940.

From this table we see that the average young male physician, at age 25, can expect to live forty-three and a half years, while his more durable female colleague can expect to live almost three years longer. Compared with the general population, physicians have a slight advantage in longevity up to about 30 years of age, after which the prospective lifetime for physicians is somewhat less than for the general population. More recent figures⁶ show that after the age of 55, physicians live longer than the white male population.

Table 6 shows ratios of death rates of physicians to those of white males, by cause. The greatest relative excess of death amongst physicians is from leukemia. Whereas some of this excess may be due to better diagnosis, serious consideration must be given to the possibility that the condition may be induced by exposure to x-rays. We will discuss this below when the death rates of separate specialties are considered. The

next cause is that of biliary calculi and diseases of the gall bladder. Fortunately both leukemia and these biliary conditions are relatively uncommon.

But the three degenerative conditions with high death rates, accounting for 40.7 per cent of all deaths in this series of physicians, which are intracranial lesions of vascular origin, arteriosclerosis and diseases of the heart and coronary arteries, have a markedly higher ratio amongst male physicians than amongst the general population. If the recorded death rates from diseases of the coronary arteries are considered alone, not including other heart diseases, the ratio of the mortality of physicians to that of white males reaches the high figure of 181 per cent.

We pursue the question of coronary disease and angina pectoris a little further in Table 7, which shows the mortality ratio for these conditions, by age groups, amongst physicians compared with the general white male population.

The increase of coronary deaths is shown amongst the medical profession, compared with all white males, from the age of 35 onwards. There is also a smaller increase in other cardiovascular conditions amongst the medical profession, in whom death rates from cancer, appendicitis, accidents, stomach ulcers and most infectious diseases are lower than in the general public.

In pneumonia there is an excess of 9 per cent; due mainly to higher death rates from the condition in physicians 65 years and over.

Whereas it might be stated that excess reporting of certain diseases amongst physicians might be due to better diagnosis, this certainly cannot explain the high prevalence of cardiovascular disease.

Table 8 shows that, of 1,000 physicians aged 35, seventy-five, or 7.5% will be likely to die of

coronary disease before they reach the age of 65, at the current death rates when the observations were made.

Having determined mortality trends for physicians in general, the next step (Table 9) is to study whether any differences exist amongst the various specialties of medicine, as they represent many different types of work. As in certain of the tables shown above, we will again express death rates as a ratio for general practitioners, and as a ratio for specialists, to the rate for all physicians, also from a paper by Dublin and Spiegelman.²

For each group the ratio was formed of the actual deaths from a specific cause to the number that group would have experienced if it had been subject to the death rates of the standard thus chosen. An asterisk after a ratio indicates that the difference is statistically significant. Simply stated this means that the chances are less than 5 in 100 that the occurrence was purely fortuitous.

Taken as a group the mortality of specialists at age 35 to 74 years is only 78 per cent of the standard while that of the general practitioners at the same ages is 110 per cent of the standard. The advantage of the specialists is somewhat greater for those below age 55, for whom the mortality ratio is 74 per cent, than for those over that age, the ratio here being 80 per cent. Each of the specialty groups studied had a lower mortality than the non-specialists.

There may be a number of reasons for the favorable situation of the specialists. There may be a degree of self-selection, in that it requires a fair degree of physical well-being to undertake long years of study. As many specialists usually earn more than general practitioners, they may be more able to take care of themselves when ill and to take longer and more frequent holidays. Furthermore, most specialists live in cities where there is good medical care.

Almost three-fifths of all deaths amongst specialists are due to cardiovascular-renal diseases, in which their mortality ratio is 81 per cent, practically at the same level as for all diseases. In this United States group there is little difference between the mortality ratios of the specialists and general practitioners in regard to coronary disease and angina pectoris.

As far as the general mortality ratios for specialists are concerned, the rank order of occurrence is as follows, in the different specialties:

Percentage of Standard

Tuberculosis	99
Dermatology	98
Radiology	90
Anaesthesiology	88
Orthopaedic Surgeons,)	
Proctologists, Virologists,)	86
Industrial Surgeons)	
Neurologists & Psychiatrists	83
Public Health	83
Obstetrics & Gynaecology	75
Ear, Eye, Nose & Throat	75
Internal Medicine & Paediatrics	69
Pathology	62

It is clear that even here the pathologists have the last chance of saying the last word. The mortality ratio for general practitioners is 110.

When we consider diseases of the coronary arteries and angina pectoris, the rank order of mortality ratios is as follows:

Percentage of Standard

Dermatology	131
Tuberculosis	124
Public Health	113
Radiology	110
Obstetrics & Gynaecology	108
Orthopaedic Surgery,)	
Proctology, Virology)	103
Industrial Surgery)	
Surgery	100
Neurology & Psychiatry	96
Ear, Eye, Nose & Throat	93
Internal Medicine & Paediatrics	81
Pathology	73

The mortality ratio for general practitioners is 102 for these diseases. In the United States this ratio is exceeded by dermatologists, tuberculosis specialists, public health specialists, radiologists, obstetricians and gynaecologists. In this complex picture most probably there are involved stress and strain, radiation hazard to radiologists and dermatologists, and possibly a self-selective factor in the case of certain men doing public health or tuberculosis work. They may possibly choose these fields because of prior bad health.

In the United Kingdom⁴ general practitioners have more coronary disease than specialists. The consultant in Great Britain is probably not subjected to the same wear and tear as his counterpart in the United States and Canada. This would be a useful subject for discussion and study.

Cancer is another disease which is of very great interest, amongst physicians, as well as amongst other people. In the same way we now show the mortality ratios for this group of diseases, in rank order of occurrence, in the group of American physicians under study. For purposes of comparison the mortality ratio for cancer in general practitioners is 109 per cent.

Cancer: Mortality Ratios
Percentage of Standard

Dermatology	158
Radiology	133
Neurology & Psychiatry	155

In order to maintain a sense of proportion in this whole question of mortality ratios in the medical profession, we should study the standardized mortality ratios for the different social groups in the United Kingdom, where Social Class I includes the professional occupations, Class II the intermediate occupations, Class III the skilled occupations, Class IV the partly skilled occupations and Class V the unskilled occupation. (Table 10).

Social Class I in Britain, according to this table has high standardized mortality ratios for leukemia, vascular diseases of the central nervous system, arteriosclerotic (coronary) heart disease, hypertension with heart disease, hypertension without heart disease, diabetes mellitus, suicide, appendicitis, and nephritis.

Particularly high standardized mortality ratios for the medical profession itself in Britain exist in regard to diabetes mellitus 140; psychoses 200, suicide 226, general arteriosclerosis 200, nephritis and nephrosis 120, cirrhosis of liver 240, cholelithiasis and cholecystitis 250, vascular disease of the nervous system 140, and coronary disease 159.

The most recent figures for comparative longevity of physicians⁶ and the general population of white males in the United States indicate that up to the age of 55 there was no difference between the two groups for age of death. For those who reached the age of forty-five, however, the physicians have an increasingly greater life expectancy for every age group to ninety and over. High socio-economic status is suggested as a reason for this increased life expectancy.

When it comes to prevention of the conditions from which doctors die, we are in a field of tantalizing possibilities and splendid hypotheses, but a dearth of sound plans of action. Perhaps the plan most useful would be regular physical examinations of physicians by their colleagues with subsequent preventive therapy.

One thing is certain, however, and that is that the medical profession tends to overwork. This is due to simple economic necessity in many cases. On the other hand it might be due to a compulsion based on the illusion of indispensability, perhaps part of the infantile omnipotence fantasy. Be this as it may, physicians, like the rest of mankind, also become tired, overworked and ill if they do not have enough rest and recreation. If

the average working man had to put in the working hours of the average physician, the former would perpetually be on strike in most countries. Admittedly there is variability in the physician's work, which is the attraction of general practice, but in the long run, overwork does not compensate for variation in the types of work done.

The following comparison based on observations made during the first world war in the United Kingdom, indicated how long hours of work are associated in industry with time lost due to illness.

Industrial Fatigue and Efficiency

Men

Weekly hours of work	63 $\frac{1}{4}$	62	54
Per cent of time lost from sickness	7.0	5.7	4.0

Women

Weekly hours of work	62	54	44
Per cent of time lost from sickness	6.4	4.3	3.1

From this and other evidence, there is a great deal of justification for a work week of about 44 hours. It is a question of health conservation, not merely an adaptation to automation. Conversely, if the industrial work week is too short, Satan may find work for idle hands to do. It is highly improbable that the medical profession in general will be faced with the latter situation. Their temptations are of a different order.

3. TECHNOLOGICAL ADVANCES AND ALLIED MEDICAL SERVICES

The history and growth of medical specialization from antiquity to the present era has been well documented in a private manuscript by the Chairman of this task force, Dr. Harding leRiche, entitled, "The Medical Specialist and the Technician". Medical literature presents a multiplicity of new articles almost daily dealing with the impact of automation, improved methods of communication, and the use of auxiliary personnel in the practice of medicine.

While many of the reports represent experiments and research data, it would appear that these new techniques are capable of producing revolutionary changes in our present methods of distribution of medical care.

The growth and development of specialization within the community, as well as in medicine, following World War II has greatly increased the productivity of physicians, and has enabled the efficient handling of a greater number of patients.

However, it is important that one does not accept changes just for their own sake. One must carefully examine all changes in the light of the following parameters:

- Does it produce a better quality of medical care to the patient?
- Does it result in an efficient service with better utilization of medical manpower?
- How economical is it?
- Is it acceptable to the consumers of medical services (the patients)?

Very little has been recorded in the literature concerning the economics of the impact of specialization and technology in medicine. As this task force is concerned with the price of medical care, this is the area

that has received most of its attention, especially the field of laboratory medicine. The task force has also considered other fields of clinical medicine, which can be affected by automation, commenting on the economics as well as the other parameters listed above.

There are certain areas in medical practice which would appear to be immune from the impact of automation. In general, these are the procedural items which demand a degree of manual dexterity and skill. Even relatively simple surgical procedures will have to be performed by physicians who are adequately trained to do these procedures. While the team approach is being adopted in many of the new and more complex procedures, the technical skill of the surgeon is still a prerequisite to a successful outcome.

In the multiphasic screening examination done by the Kaiser-Permanente Plan in California, the sigmoidoscopy, the pelvic examination and the taking of a Papanicolaou smear are still performed by a physician. In the field of obstetrics, while midwives may be used to assist or even to perform the actual delivery, it is often felt that, in order to retain favorable maternal and infant mortality and morbidity figures, this is best done by physicians.

The above-mentioned are merely a few of the areas which do not lend themselves to automation. In almost every branch of medicine, there are certain skills and procedures which, because of the complexity of performance and the variations in interpretations of results are such that they must remain the sole prerogative of the doctor. These procedures will continue to be paid for in the traditional manner.

Before discussing the areas that lend themselves to automation, it is necessary to consider what a physician does, or what is his work. Work has been defined, (Webster), as "anything upon which labor is expended;

that which engages one's time or attention; an undertaking." It can also be considered as the assuming of responsibility.

The Medical Professions Acts in all provinces vest in physicians the legal responsibilities for their acts. As we attempt to enlarge the scope and make-up of the "health team", it is important that we remember that the legal responsibility for decisions relating to patient care are still vested in physicians. Until such time as the ancillary personnel are given legal responsibility for their acts, of necessity, they must be responsible to the physician in charge.

The important area of consideration for this task force as it relates to the utilization of the allied health services is a very basic one; who is going to pay them and how are they going to be paid for their services?

As one scans the list of the galaxy of medical specialists and their auxiliaries (see Note at the end of this chapter), one realizes that many of these services are already supplied and paid for by the hospital budgets, and the public health budgets of the provinces. Many are already being provided by physicians in their offices and by public and private clinic groups. Some are provided in urban centres under existing home-care programs.

These may be financed totally from public funds or from a combination of public and philanthropic funds. Some also exist as private practices in their own fields, such as physiotherapists, instrument-makers, makers of artificial limbs, et cetera.

However, if one envisages the utilization of the allied health personnel to extend the physician's "eyes and ears", and to assist with problems of a psycho-social nature in the home environment, then one must look beyond the institutional-based assistants who have been used to date.

The use of this personnel must be tailored to the community's need, and will vary in a metropolitan, urban and rural setting. It will also vary with the number of physicians available in any locale to make use of the services.

As an example, within a rural setting, the supervision and the provision of services of the public health nurse, the social worker, the clinical psychologist, dietitian, and the health educator might well be supervised by the Medical Officer of Health. It would be necessary for him to work in close liaison with the practising physicians in that area, either solo or group. In a smaller urban centre, the services might well fall within the scope of the home-care unit financed either privately or publicly.

In a larger urban centre, it is possible that a large group of physicians could make good use of all of these services on a private basis.

However, if public health nurses or the Victorian Order of Nurses are to make calls on behalf of physicians, either to provide care to chronically ill patients, or to ascertain the need for physician services in the home, it should be pointed out that the "service cost" of making such a call is relatively constant, whether made by a physician or by a nurse. It is equivalent to the patient's taxi fare to the office. The only variant is the professional component of such a call and presumably the charge for the nurse's services would be at a lesser rate than the charge for the physician's visit.

The same principle pertains to visits made by social workers and all other members of the health team. In the past, fee schedules have not differentiated between "service costs" and "professional costs" in home visits. The only area in which this is reflected is the charge for mileage on rural calls.

In some areas, the saving of a physician's time, thus enabling him to see a larger number of patients and increase his earning capacity may be sufficient to fund the services of one of these specially trained people.

An example is a group of 60 physicians in Regina, Saskatchewan, who have employed a dietitian and provided her services to their patients at no charge over the past 20 years. This has enabled them to render a better and more personalized dietetic service to their patients, as well as giving them more time to increase their earning capacity, which has enabled them to afford to provide this service.

A more common example of the use of this principle has been the use of office nurses in giving therapeutic injections, and also carrying out diagnostic and therapeutic procedures under supervision.

However, if the allied health personnel are to be utilized to their fullest extent to assist physicians and thus improve the utilization of our medical manpower, there is a need for operational research to study various methods of remuneration for the services which they can render.

These projects must be structured in such a way as to assess the actual costs of providing their services, the time saved by physicians in the utilization of their services, and the resulting increased productivity of the physician. It is only after such data is available that one can reasonably consider how the payment for the services can be covered under a Medical Care Insurance Plan.

The cost figures for the periodic examination of well people have been noted by this task force when considering the multiphasic screening program of the Kaiser-Permanente Plan.

While at first glance, the cost of such an examination would appear to be prohibitive on a nationwide basis, it may be fair to observe that, considering the scope of the examination, the costs are relatively small. If one were to "a la carte" the charges on a fee-for-service basis for the laboratory radiological and medical components of this examination, using any Canadian fee schedule, the total would far exceed the actual charge for this extensive examination.

As it depends upon a volume of patients to have it operate economically, its use, of necessity, must be limited to larger urban centres. Moreover, it has yet to be proven that multiphasic screening has a beneficial effect on the health of the community.

It should still be regarded as in the experimental phase, and, like experimental surgical procedures, such as cardiac transplants, not financed by government medical care insurance plans.

Diagnosis

The establishment of a diagnosis involves the collection of data from patients, roughly categorized into three main groups; history taking, physical examination, and laboratory and radiological data. In some diseases (for example, angina pectoris) the diagnosis can be made entirely from the history; in other conditions such as psoriasis and asymptomatic carcinoma of prostate, it is made almost entirely by physical examination; and in still other disease states such as asymptomatic diabetes mellitus, the diagnosis is based largely on laboratory data.

Some of the more complex disease processes are dependent upon information from all of these sources, while others can only be diagnosed after repeated examinations and observation over a period of time.

A good deal has been written concerning the utilization of computers to store information concerning various symptom-complexes for the purpose of enumerating differential diagnoses and deducing the most probable diagnosis through the input of data into the computer.

However, there would appear to be no general agreement among the authorities on how to program the required information into the computer in order to insure adequate and meaningful output data. While this may become a possibility of the future, the variations of the disease processes themselves, as well as the individual variations within the human organism are such that the widespread use of these techniques as a useful tool in diagnosis would be most improbable. However, the physician's time can be saved by the utilization of an automated history taking procedure, and studies to date would indicate that the data obtained is sufficiently accurate to warrant consideration.

Numerous studies have been done on means of collecting data pertinent to the patient's problem prior to his interview with a physician.¹ Recent studies by the Mayo Clinic on an automated medical history (AMH) revealed that patient performance was related to educational level, but did not differ significantly within age groups.²

The completion time of their questionnaire was an average of 65.7 minutes, the time differing with the patient's educational level, age and perception of his state of health.

Correspondence between the patient's chief complaint as reported in the AMH and the related symptoms reported was 94%. The AMH obtained 95% of the information about the symptoms recorded in the traditional medical record.

Information pertaining to past surgery and past illnesses was more accurate in the AMH than in the traditional physician's records. From these studies, they concluded that the feasibility of the development of more sophisticated and comprehensive medical information system to aid physicians was worthwhile.

While a good deal of the physical examination can be done and recorded by a well-trained office nurse, (for example: height, weight, anthropological measurements, tests of hearing and visual acuity, temperature, pulse, respiration and blood pressure), the bulk of the actual physical examination should be done by a physician.

As many of the findings require trained observation and interpretation, this total procedure does not lend itself to automation in patients presenting with symptoms. While the physician may be assisted by modern technology, such as the use of ultrasonic waves to outline masses in the abdomen, these techniques do not discern the amount of, or extent of tenderness in the areas involved.

Similarly, while mammography may be of assistance in obtaining additional information concerning breast lumps, it is still a relatively expensive procedure, and is not entirely accurate. In such cases, it is important not to consider the 95% accuracy, but rather the 5% inaccuracy.

The impact of the process of automation on a clinical laboratory has been mentioned before. However, another opinion has been expressed by Dr. G. Octo Barnett in an article entitled, "Computers in Patient Care":³

"Use of Computers in this field has been stimulated by the rapidly increasing workloads of laboratories and the fact that data processing has become the bottleneck in the laboratory. Scarce laboratory staff members now spend up to 50% of their time in paper work accessioning, recording, transcribing and reporting.

"The challenge of data processing in the clinical laboratory is more than a problem of simple automation or mechanization of physical instruments. An optimum data handling system should provide both rapid processing of laboratory procedures, with minimal error and minimal delay and legible reporting of interim and final reports for the physician and for the patient's chart.

"A similar report should correlate, interpret and flag the results that indicate abnormalities. For future clinical care, research and quality control, the system should permit rapid retrieval and analysis of data according to patient and to type of analysis performed.

"Limiting laboratory tests to those indicated by other information is as absurd as limiting the physical examination and medical history to areas indicated by the patient's complaints, and an increasing trend is developing toward the use of batteries of tests.

"The introduction of automation in the clinical laboratory will facilitate this trend. In one study, a profile of eleven commonly requested determinations indicated that in one of ten patients, the physician was helped directly in patient care by the reporting of abnormalities detected by the battery.

"Computer techniques are also useful in detecting unusual patterns of clinical laboratory data in which the presence of an abnormality may be signified by a combination of several different tests rather than by a change in a single test."

A number of experiments have been reported in Canada and United States concerning the automation of electrocardiographic diagnostic criteria and the transmission of E.C.G.'s linked into the telephone system. Similar studies have been carried out on the interpretation of electroencephalograms.

The results of the initial studies would indicate that interpretations by computers are accurate, and that they can be done on an economic basis. If the telephone transmission of this data becomes more popular, it is likely that the cost will become even more economical.⁴

Treatment

It has already been indicated that surgery as a method of treatment is not amenable to automation. However, the prescribing of drugs for specific conditions can be assisted by the use of data stored in a computer. Dosage schedules, drug incompatibilities, and adverse reactions to drugs by a patient can be stored on computer tapes and be made readily available to physicians, either in hospitals or in their offices.

One of the areas that is time-consuming in the treatment of any disease is the explanation, reassurance and education of the patient in how best to live with his disease and control it. At present, physicians use the most expensive method of instruction, the private tutorial.

Modern audiovisual equipment could do a better job of educating patients and conserve countless hours of physicians' time. Prepared film strips or videotapes on the management of disease processes could be made by experts and shown to patients in the physicians' offices. Explanatory pamphlets given to patients for future reference at home would act as a reminder of what they had seen.

A brief interview with the physician after they had viewed the film would enable them to clear up any problems or difficulties which still remained. These could be further clarified on subsequent visits. While the use of such sophisticated equipment might prove expensive to a solo practitioner, it may be that the

time saved would render its use economical and even self-amortizing to a group of physicians.

New Techniques

While most of the foregoing discussion has been on the basis of distributing medical care to a larger number of people in a more efficient and economic way, it should be pointed out that many new techniques have been, and are being devised that extend the horizons of medical treatment.

By their very nature, they will be more expensive to provide. In general, these represent the wide range of services which were not previously available. As these are complex procedures, they require a number of doctors spending a great deal of time looking after very few patients.

Without going into detail, these include such procedures as cardiac catheterization, organ transplants, dialysis, coronary care units, intensive care units, et cetera. While the monitoring of these patients by means of continuous electrocardiograms and the automation of laboratory data is of assistance, they still require a battery of physicians backed up by a battery of technical experts.

As newer techniques are devised to preserve and lengthen man's life through increased medical knowledge and improved technology, it is likely that the expense of providing them will also increase. If the Canadian public wishes to derive the benefits of these advances, they must be prepared to pay for them.

4. TOTAL COST OF HEALTH CARE AND THE COSTS OF PHYSICIANS' SERVICES

At the present time the data on actual expenditures on health care in general, and physicians' services in particular, only extend to the calendar year 1966. Preliminary data for 1967 have recently become available, and are taken into consideration in the following estimates. Data on some of the other variables - such as population, gross national product, and the consumer price index - used in the estimates are the latest available, and in some cases reflect the situation in early 1969. (See Note, at conclusion of this chapter, for definitions of terms used.)

In each of the following comparisons three time periods are examined:

- 1957 to 1966, to indicate well-documented developments during a historical period
- 1966 to 1970 to describe the actual and estimated developments during the current period, and in particular to show the changes in the cost of physicians' services that appear to be taking place concurrently with the introduction and implementation of medical care insurance legislation.
- 1970 to 1980, to provide some idea of the nature of the relationship that may emerge, given certain assumptions about the annual rates of changes of the different variables. Some of these estimates may be taken to demonstrate that future developments that seem to be in keeping with currently observed trends may produce unacceptable results.

Total Expenditures on Personal Health Care Services

The following comparisons are expressed in terms of current rather than constant dollars. Note that the figures on expenditures on physicians' services refer to

payments made to physicians in private fee practice. That is the estimates for 1970 and 1980 do not necessarily coincide with program costs under a national medical care insurance program.

The latter would include payments made to salaried physicians in mental hospitals, TB sanatoria, etc., but would exclude payments made for Workmen's Compensation Board cases, for uninsured services, etc. The estimates are based upon the assumption that all provinces will operate programs that qualify for federal cost-sharing under the Medical Care Act, during the entire year 1970.

The estimates of the Gross National Product, Personal Income, and Personal Disposable Income are based upon the assumption that these measures of economic activity in Canada will show increases of 7.0 per cent, 7.4 per cent, and 7.2 per cent per year respectively.

All the components of personal health care expenditures are estimated to increase at rates higher than this. It seems obvious that this process cannot continue indefinitely, and that action to restrain the increases in the costs of health care services is unavoidable.

The Royal Commission on Health Services promoted the idea that Canadian society should expect -- and, indeed, support -- an expenditure on personal health care services which represents a reasonably stable proportion of the Gross National Product.

The commission went further and noted that the proportion should even increase somewhat -- to perhaps 6 per cent -- over the coming years to allow for their constantly broadening availability to more and more Canadians. The argument was advanced that actual dollar increases in health care costs were largely irrelevant provided these tended to be reflected, over time, in a

reasonably stable relationship of 5 or 6 per cent of the Gross National Product.

As shown in Table 2, expenditures on personal health care services may be approaching about 6 per cent of the Gross National Product at the present time, and may exceed this level beginning in 1970.

A historical comparison of the Canadian expenditures with those of other countries in relation to the percentages of the gross national products that are devoted to personal health care appears in Table 13. The Canadian percentages differ slightly from those in Table 2 because both the components of the total and the figures for the Gross National Product were adjusted to make them comparable to those available for other countries.

The increase in Canada, amounting to about 40 per cent for the period 1957-1966, was more rapid than in any of the other four nations shown. In 1957 Canada had been third among them, after New Zealand and the United States, and was less than half a percentage point ahead of the United Kingdom and Norway.

By 1966 Canada had moved ahead of New Zealand and the United States and was spending on personal health care a substantially higher portion of its gross national product than was any of the others.

The Costs of Physicians' Services

The following estimates examine in more detail the changes in the costs of physicians' services. As shown in Table 11, from 1957 to 1966 total expenditures on physicians' services increased at rates exceeding the rate of growth of the Canadian economy by relatively modest margins.

During the current period the costs of physicians' services are increasing at extremely high rates, but it is anticipated that the rate will become more moderate again after 1970, that is after the implementati

of virtually comprehensive and universal medical care insurance programs in all provinces.

The per capita figures in Table 14 show the changes in the size of the various measures after eliminating the effects of population changes. It is estimated that changes in the per capita costs of physicians' services are due to the following factors:

(1) 1957 to 1966

a) Improvement in the number of active fee practice physicians per 1,000 persons (from 13,063 or .79 per 1,000 persons in 1957 to 17,196 or .86 per 1,000 persons in 1966): 1 per cent per year

b) Increases in the proportion of specialists (from 31.9 per cent in 1957 to 41.5 per cent in 1966):
.4 per cent per year

c) Changes in technology, i.e. introduction of new services and procedures (e.g. open-heart surgery, kidney transplants, etc.): .2 per cent per year

d) Progressive reduction in the proportion of uncollectable accounts as a result of increasing insurance coverage and of greater affluence among the population: 1.5 per cent per year

e) Increases in the price of services: 2.6 per cent per year

f) Increased utilization for reasons other than those outlined above (improved supply of physicians, greater insurance coverage, etc.). These increases may be due to changes in the age-sex distribution of the population, the increase in the proportion of the population living in urban areas, improved education etc.: 1.4 per cent per year

(2) 1966 to 1970

- a) Improvement in the per capita supply of physicians (to 19,505 or .91 per 1,000 persons in 1970): 1.5 per cent per year
- b) Increases in the proportion of specialists: .4 per cent per year
- c) Changes in technology: .2 per cent per year
- d) Virtually complete elimination of uncollectable accounts: 3.0 per cent per year
- e) Increases in the prices of services: 6.6 per cent per year
- f) Increased utilization for other reasons: 1.5 per cent per year

(3) 1970 to 1980

- a) Improvement in the supply of physicians (to 26,800 or 1.06 per 1,000 persons in 1980): 1.6 per cent per year
- b) Increasing proportion of specialists, changes in technology and increased utilization for other reasons: 2.1 per cent per year
- c) The residual is assumed to represent increases in the price of services: 3.3 per cent per year

The estimates of the factors contributing to increases in per capita costs are based upon the best available information, but may be subject to some error. In particular, it is quite impossible to measure the exact size of the item intended to show the impact of the gradual elimination of uncollectable accounts.

Assuming that the figures give a reasonable indication of the relative magnitude of the various factors, it can be seen that price changes, together with the rapid elimination of uncollectable accounts, are primarily responsible for the large increases in the per

capita costs of physicians' services during the current period.

Between 1957 and 1966 the average net professional earnings of physicians increased at a faster rate than the average incomes of the employed labour force (6.8 per cent per year for physicians compared to a 4.5 per cent annual growth in the average labour income). This occurred in spite of relatively modest price increases, and a more gradual reduction in the volume of uncollectable accounts than during the current period.

This last-mentioned item will, of course, no longer contribute to increases in physicians' incomes after 1970, that is after the total Canadian population is assumed to be covered by medical care insurance. Any increases in physicians' earnings in future would thus depend upon the other factors as outlined under (3) above.

Under these conditions it could be argued that an annual rate of change of 3.3 per cent in the price of physicians' services may be too low, whether such a rate of increase could be considered as adequate and acceptable would depend upon such factors as the degree of inflation in the economy in general, the extent of increases in the costs of equipment and services a physician must purchase, and also upon the average income of physicians at the beginning of the period.

According to the statistics on gross professional earnings shown in Table 15, even at a rate of increase of 3.3 per cent per year in the price of physicians' services, average gross incomes would still increase at an annual rate of 5.4 per cent. Admittedly, some of this increase would be due to an increase in the average workload of physicians.

It should also be noted that at the rates of increase shown above, the total costs of physicians'

services would still exceed the anticipated rate of growth of the Canadian economy.

All the data presented so far were expressed in terms of current dollars. The figures in Table 16 show some of the comparisons in terms of constant dollars, and consequently are designed to indicate the real changes that take place.

The figures are based upon the current-dollars figure but have been adjusted in proportion to observed and anticipated changes in the Consumer Price Index, in which 1957 is taken as 100. It is assumed that the rate of growth of the Consumer Price Index, after averaging about 2 per cent per year between 1957 and 1966, and 4 per cent from 1966 to 1970, will be only 2.8 per cent from 1970 to 1980.

Constant dollar figures for Personal Income in Canada are provided to put the data on the constant dollar costs of physicians' services and of gross earnings of physicians into perspective.

A brief historical comparison between Canada and the United States with respect to the per capita costs of physicians' services, and the relative position of total costs of physicians' services within the whole economy, is shown in Table 17.

During this period, not only were per capita costs higher in the United States than in Canada, they also increased at a faster rate. To some extent this may be due to a more favourable supply of physicians.

(The number of active self-employed physicians in the United States rose from a ratio of .90 per 1,000 persons in 1957 to a ratio of 1.00 in 1966. Fairly comparable figures for Canada were .79 in 1957 and .86 in 1966).

Also, in the United States the total costs of physicians' services tended to represent a greater, and

more rapidly increasing, share of economic activities than in Canada. Unfortunately, there are insufficient data to determine whether these relationships will still be true in 1970.

Family Expenditures on Health Care Services

The comparison shown in Table 18 are based upon a survey of urban families carried out in Canada in 1964. According to the survey, direct expenditures by urban families on health care services accounted for about 3.9 per cent of total family expenditures and 4.7 per cent of current consumption expenditures, that is total expenditures minus personal taxes, gifts, contributions and savings.

These percentages were almost identical to those relating to expenditures on tobacco and alcohol. Of the total of \$251 per family during the year in direct spending on health care 32.6 per cent went to prepaid insurance plans, 17.8 per cent was expended on physicians' services, 16.3 per cent on dentists' services, and 19.9 per cent on prescribed drugs. The remaining 14.4 per cent was spent on optometrists' and chiropractors' services, appliances, ambulance services, etc.

The data on health care services cover only direct expenditures by families, and although they contain a component covering payments made to prepaid insurance plans, they do not fully reflect the payments made on behalf of patients by insurance agencies, including the payments made by provincial hospital insurance programs.

In this connection the following comparisons may be of interest. Taking only expenditures on physicians' services, in 1957 direct payments by patients accounted for 53.9 per cent of the total. Voluntary medical insurance accounted for 34.4 per cent, and public agencies (including public medical insurance and Workmen's Compensation Boards) for 11.7 per cent.

By 1965 the proportion made by patients directly had declined to 31.3 per cent, while the share of voluntary medical insurance and public agencies had increased to 55.5 per cent and 13.2 per cent respectively.

5. PHYSICIANS' INCOMES

In the field of physicians' services, as distinct from hospital services, for example, virtually all the effects of changes in expenditures on medical services are reflected in the incomes of one professional group.

Although the effect is direct only with respect to gross incomes, a physician has some discretionary power regarding the proportion of his income devoted to expenses, and consequently he can influence, within certain limits, the extent to which the direct effects upon his gross income are translated into changes in his net income.

This means that any measures that may be employed to keep increases in the costs of physicians' services at a "reasonable level" will have repercussions upon the incomes of physicians. In other words, recommendations that may be made by this task force should be evaluated in terms of their likely impact upon physicians' incomes.

Such evaluation should consider the adequacy of physicians' earnings. That is, recognizing the prolonged training period, the length of the working-life of a physician, and the conditions under which he works during his years of professional activity, do earnings of physicians bear a reasonable relationship to earnings of persons in other professions and to earnings of physicians in other countries?

Taking the last-mentioned point first, some data are available regarding the earnings of physicians in the United States. (Louis S. Reed, Studies of the Incomes of Physicians and Dentists, U.S. Department of

Counting only "Offices with net profit", average "business receipts" of U.S. physicians from self-employment practice came to \$45,039 in 1966. It was \$41,916 for physicians in "sole proprietorships", and \$55,489 for physicians in partnerships.

The corresponding, but not necessarily comparable, figure, for Canadian physicians was \$35,223 in 1966. Average "net profits" of U.S. physicians were \$27,155, \$25,497 for physicians in "sole proprietorships", and \$32,701 for physicians in partnerships. In this case the corresponding Canadian figure was \$23,262.

As mentioned in the previous chapter developments during the current 4-year period are in the process of altering the relationships, and of raising the incomes of Canadian physicians to a new level.

Although available data on the earnings of physicians in 1967 must still be considered preliminary, and may be subject to some modifications, the figures in Table 19 seem to confirm that the rate of increase of physicians' incomes has begun to accelerate since 1966.

The data indicate that expenses of practice have tended to increase at lesser rates than gross earnings. In 1957 expenses were 38.2 per cent of gross earnings, and in 1967 this percentage had declined to 32.5 per cent.

Consequently, net earnings represented an increasing share of gross earnings. As indicated, much of the increase in physicians' gross earnings during

the current period is due to price increases and to the progressive elimination of uncollectable accounts.

The last-mentioned item, together with the simplification of administrative procedures that may result from a reduction in the multiplicity of paying agencies under province-wide medical care insurance programs, may actually reduce some expenses of practice.

Also, increases in earnings resulting from price changes should have little effect upon expenses. For these reasons it may be safe to assume that expenses of practice will grow at an average rate of 6 per cent per year from 1966 to 1970, and at a rate of 5 per cent per year thereafter. The resulting earnings and expense figures for 1970 and 1980 may therefore look as shown in Table 20.

By 1970 expenses of practice may decline to 27.6 per cent of gross earnings, and to 26.6 per cent in 1980. Consequently net earnings are estimated to increase at somewhat higher rates than gross earnings.

The data for all Canada obscure wide differences among the provinces with respect to the earnings of physicians.

The increases, shown in Table 21, have tended to be larger in terms of percentages in the low-income provinces than in the high-income provinces. The largest increases in actual dollar amounts, however, occurred in Ontario and Alberta.

Similarly, although the percentage gap between the highest and lowest figures of average net incomes in various provinces declined from 1957 to 1967, the dollar amount of the gap increased (from \$6,297 in 1957 to \$8,728 in 1967). It can be assumed that some of the

differences in the past were due to such factors as the affluence and extent of insurance coverage of the provincial populations.

Consequently, the eventual introduction of universal medical care insurance programs in all the provinces may well lead to greater uniformity in the earnings of physicians in the future.

Possibly, this would also bring about a more equitable distribution of medical manpower. While this is possible, there is no guarantee that this would actually happen. Universal medical care insurance may cause the incomes of physicians in provinces under-supplied with medical manpower to increase, and this may exert some pull.

On the other hand, there is no reason to believe that any province of Canada is so oversupplied with physicians that a point of saturation is reached beyond which the population of the province could not absorb any more medical care. That is, universal medical care insurance may also have the effect of providing a reasonable income to physicians in relatively well supplied provinces, and consequently the incentive to move may be lacking.

Table 22 shows the distribution of active fee practice physicians in Canada, and the changes which occurred during a recent decade.

As mentioned earlier, one other factor which should be taken into consideration in evaluating the incomes of physicians involves a comparison with persons in other professions. The following Table 23 based upon the 1961 Census of Canada, refers to the reported earnings of male individuals in selected professions. There were also 405 female self-employed physicians. Their average income was \$7,968. Physicians not in

self-employment, and presumably in salary-practice, numbered 6,101 males and 776 females. Their average incomes were \$9,939 and \$4,869 respectively.

Available data suggest that the relatively favourable income-position has tended to improve over time. Table 24 is based upon taxation statistics for 1957 and 1966.

It is undoubtedly true that physicians, and in particular specialists, have a longer training period and will enter the labour force at a later age than persons in virtually all other professions. There may also be forces, and this again may depend upon specialty, to impel retirement fully or partially at a relatively early age.

On the other hand, physicians may enjoy certain advantages during their working life which may partly compensate them for the delayed start, and an early retirement. Among these possible advantages is the fact that many of them can immediately begin to make substantial incomes. For example, in Saskatchewan, Medical Care Insurance Commission payments to physicians in practice for less than two years tended to be lower than those to physicians established for a longer period.

But there were several physicians in this group who achieved high rates of returns within a very short time after entering practice. According to Table 25, earnings of physicians in Canada, in common with those of dentists, and to a lesser degree lawyers and notaries, reach a high plateau at a relatively early age.

The average earnings of most other university graduates tend to increase gradually. Note in particular the patterns of the selected types of "owners and

managers", a professional group with which physicians tend to identify. In each case the incomes continue to increase with age.

Part of the reason for this may be related to the competitive situation in which professionals work. A physician's performance tends to be judged by lay persons. His patients may appreciate his personality and charm, but are not usually very knowledgeable regarding his professional competence.

An aspiring manager, on the other hand, usually has to work his way up through the ranks. His performance tends to be judged by those above him, that is by persons more experienced than himself, in his line of work.

The data on Canada are confirmed by the graph, appearing as Table 26, showing the situation in the United States in 1959. It seems quite clear that at the beginning of the 1960's the lifetime earnings of physicians tended to compare favourably with those of persons in other occupations, both in Canada and the U.S.

The relative position of physicians has improved since then, and is undoubtedly still improving at the present time. It is quite possible that the difference between the lifetime earnings of physicians and of other occupational groups is now sufficiently large to compensate the former for the personal costs, including earnings foregone, of their prolonged training period.

Physicians are not a homogeneous group. One of the main factors which has a bearing upon both the length of the working-life, the status, and incomes of physicians is related to specialty. Even among

specialists there tend to be wide variations. Taking, for example, the incomes of physicians, the differentials shown in Table 27 in the net earnings, by type of specialty, applied in 1966 (see also the attached Table 28 for details by province and specialty).

These differences may be due to the structures of fee schedules, in particular the alleged phenomenon that procedural items of service are paid too generously compared to visit services and examinations. Table 29 contains some indices of recent changes in the fee schedules. These indices seem to indicate that a possible imbalance in this area has been recognized and that medical associations in various provinces have tended to increase the fees for visit services by greater amounts than the fees for procedures.

Another related problem concerns the allegation that general practitioners are underpaid compared to specialists. Again, medical associations seem to have acknowledged that this may be the case, and have taken steps to reduce possible inequities.

Attached Tables 30 and 31 show that in most provinces the fees for general practitioners' services have been increased more than those for specialists' services.

In this connection it may be observed that relatively large percentage increases in the fees for general practitioners' services are required to avoid widening the gap between the incomes of these two types of physicians. As already shown in Table 27, the average net incomes of all specialists exceeded those of general practitioners by about 35 per cent in 1966.

Under these conditions, and ignoring the role of expenses for purposes of this comparison, a fee

schedule adjustment resulting in a 10 per cent increase in the average net income of specialists must be matched with an increase of 13.5 per cent in the fees for general practitioners if both groups are to realize the same dollar increase in net income.

While it may be fair and correct that specialists should be compensated for the greater length and cost of their training, the question must be asked whether the incentive needs to be sufficiently strong to cause more and more physicians to become specialists. While it may also be true that advances in technology and modern methods of treatment require ever more knowledge and an increasing degree of specialization on the part of some physicians, it is not clear whether the amount of illness where the skills of a specialist are required increases sufficiently to require the training of more specialists.

It has been claimed that 85 per cent of the complaints brought to the attention of physicians can be treated by general practitioners. But, as demonstrated in Table 32 at the present time the number of specialists is close to 50 per cent of all physicians in private practice. It may be that Parkinson's Law also operates in this field, and that the amount of illness "judged" to require attention by a specialist tends to keep pace with the supply of specialists.

The application of the economic principles of specialization and division of labour is justified if the volume and nature of the goods can be improved in this way. Specialization and division of labour become economically wasteful if they result in undue fragmentation of the production process, and underutilization of high-priced skills.

Table 32 also is designed to show the distribution of active fee-practice physicians by specialty,

and of changes that have taken place over the last few years. All the figures are estimates, based upon information of the supply and distribution of all active civilian physicians.

In comparing the data in Tables 27 and 32, it can be seen that the diagnostic specialties, which had the highest earning in 1966, also showed the largest increases in supply. On the other hand, in the case of medical specialists the supply grew at a rapid rate in spite of the relative unfavourable income position of these specialists.

Although the earnings of surgical specialists were high in 1966, the supply of this group of physicians increased at comparatively modest rates. Unfortunately, in the absence of information on the earnings of various specialists at the beginning of the period, it cannot be determined whether or not these tendencies reflect the interplay of demand, supply and income factors. For example, were the earnings of medical specialists towards the end of the period relatively low as a result of the rapid increase in supply?

It has been suggested that the lifetime earnings of physicians in various specialties should be about equal, taking into consideration only differences in the length of working life, and to some extent the general costs of education, but not making any allowances for differences in the intrinsic value of different types of specialists to society. Considering only the length of the working life and average incomes of different types of specialty by age-group the following results are obtained.

With respect to length of working-life the assumptions are:-

General Practitioners	- age 25 to 65
Medical Specialists	- age 30 to 65
Surgical Specialists	- age 30 to 60
Radiologist & Pathologists	- age 30 to 65

Earnings by age-group are based upon the distribution of net earnings from all sources in 1967, and the difference in earnings by type of specialty are those shown in Table 27.

Given the just described assumptions, Table 33 shows that the life-time earnings of the first three types of specialties appear to fall within a fairly narrow range.

The difference between the total earnings of surgical specialists and general practitioners can possibly be justified in terms of the discounted value of the personal costs of education. Using this measure, the medical specialists are likely to be at a disadvantage compared to general practitioners.

6. ALTERNATIVE METHODS OF PAYING PHYSICIANS, WITH
SPECIAL REFERENCE TO GOVERNMENT INSURANCE IN
CANADA

In 1966, payment for the services of physicians in private practice in Canada amounted to \$605 million out of a total operating cost of health services of \$2,815 million. The cost of physicians' services had doubled since 1958. Recent estimates by the Federal Government indicate at least a 50% increase since 1966.

The cost of providing professional medical care to a community depends on the method by which payment is made to the doctors. Under some systems, total payment is pre-determined and can be tied to a budget: under others it is open-ended and unpredictable.

Fixed total costs (for a stable community-population and doctor-population) may be obtained by using a system of salaries, a capitation system, or a fee-for-service system in which the percentage of fees payable from a pool-fund varies with the volume of services.

A relatively unpredictable cost results from use of a fee-for-service system which is not adjustable, regardless of the volume of services rendered. In Canada, the vast majority of medical services are paid for under such a system.

It is traditional to this country, and has persisted since the advent of government insurance plans. It should not be forgotten, however, that other methods are used in other jurisdictions, and under special circumstances in Canada.

Salaried Physicians

Hospital care in many countries, including Britain, is given almost exclusively by doctors working on a salary. So is hospital care for all patients in mental hospitals in Canada, and, in some provinces, other care also. For example, radiotherapy for cancer is given by salaried therapists in Ontario, and general services in outpost locations in Newfoundland are rendered by salaried general practitioners.

Payment by salary is only suitable for medical care in circumstances where the doctor's volume of work remains constant. In hospitals, it can be assumed that the number of patients and the treatment mix never varies very much, so that the doctors are kept under a steady work-load.

A fair and reasonable salary can therefore be established for them. In small isolated communities with only one doctor, the same applies to general services, but it is impossible to determine a proper salary for a doctor in private solo competitive practice, which is the situation in most of Canada. He cannot be supervised to see that he is doing his fair share of work. He may be tempted to draw his salary and avoid much of the responsibility.

Salary is therefore incompatible with private practice of the kind we know in this country, where both in-hospital and out-of-hospital care is in the hands of private practitioners.

Capitation Payment

This method of payment for personal medical services consists of paying an agreed sum to a single doctor or a group of doctors for total care of the patient for a year, regardless of whether the patient

requires much attention, little attention or no attention.

The best-known example is the General Practitioner Service in Britain. The St. Catharines Community Group Health Centre in Ontario operates under this principle, each member paying an annual premium for whatever care he may require. The Centre is thus both the insurer and the purveyor of medical care. The doctors divide the total receipts according to a formula not related to their work-load.

The same financial arrangements are found in Group Health Services in New York and Kaiser Permanente in California, which include hospital costs in their coverage.

The capitation system is applicable to the General Practitioner Service in Britain because all specialist and hospital care (except for the very small amount of privately-financed care) is provided by salaried doctors, thus reducing "total care" to home and office work, which can be provided by a single practitioner.

It is not, however, applicable to the whole Canadian medical scene, because here there is no such economic division into specialist and general practitioners providing hospital and non-hospital services respectively. It could however be extended to other large clinics capable of providing almost total care of an individual. At the present, nearly all of these are paid on a fee for service basis.

There are advantages to the capitation system for large clinics. For one thing, there is no direct financial incentive to the doctors to provide more care rather than less, to order more investigations than are necessary, or to perform procedures of doubtful value.

Other advantages to the paying agency and the clinic are the elimination of individual accounts and the assurance of a fixed budget, on which each doctor's income can be predetermined. On the other hand, the lack of financial incentive may result in less than adequate care being given, and another disadvantage to the system is that it deprives the patient of the freedom to consult a doctor who is not associated with the clinic which has received his capitation fee.

At present, no insuring agency in Canada, apart from closed union groups, operates a medical plan in this way. It is well worth considering for any clinic which might prefer it, the capitation sums being paid by government or commercial carriers. Like the salary method, however, it cannot be applied to individual practitioners or small groups or clinics, which are unable to provide total care. Moreover, universal hospital insurance in Canada influences the picture in a way which does not occur in the United States.

Fee Per Item of Service

The fee-for-service principle is deeply enshrined in traditional Canadian practice. The doctor is paid for exactly what service he performs, no more and no less. For individuals who pay their own accounts, and who wish to feel free to consult any physician of their choice, it is the only satisfactory method.

In the context of universal medical care insurance, however, some of its features become undesirable. The chief of these features is the use of a fee-schedule to determine the correct fee payable for each and every kind of medical service. Under the universal insurance scheme, schedules become bones of contention between doctors and carriers, their length and complexity increase every year, and yet there are

still many cases which do not exactly fit any description in the schedule.

Another disadvantage is the laborious claim system under which every service must be reported in detail, coded, processed and paid for separately. The Saskatchewan Medical Care Commission expends 55 cents on processing each claim, the average amount of which is about \$11. New systems of direct computer input from doctors' offices may reduce this disproportionate expense.

A third problem is the undeniable fact that fee schedules are open to abuse. The section of this report which deals with Overutilization discusses this increasingly serious matter. Even without blatant overutilization, the fee-for-service system leads to relatively unpredictable increases in the total cost of care, which experience shows to be always greater than expected.

Attempts to prorate schedule payments according to the total volume of services, in order to keep costs within a budget, are extremely unpopular with doctors, who cannot see why their personal incomes should be affected by the general utilization rate.

One major advantage of the fee-for-service system in the context of universal insurance is the facility for quantitative appraisal of the work of each doctor and each type of doctor. Profiles, statistics and even morbidity studies can be prepared from submitted claims.

It is probably true that the fee-for-service method of payment according to a schedule of fees or schedule of benefits (the distinction arises if the insuring agency does not pay the full fee charged by

the doctor) is too firmly entrenched in Canadian medical practice to be displaced by any other method.

Planning bodies should nevertheless be aware that recent developments in medical care insurance have introduced previously unknown disadvantages and difficulties of application into the method. If present trends continue, it may become obsolete.

Payment by Time

The September 1967 issue of the American publication Medical Care contains an article "DIFAM - A New Method of Medical Care Insurance Payment" by Boyd of Toronto. It describes in detail an untried fee-for-service system of paying doctors which seems to have some advantages over the use of a fee schedule.

The fee for each service is calculated by computer, taking into account the time in minutes which the service took, as well as other factors such as the general nature of the service and the characteristics of the doctor and his practice. It might be worth considering as an alternative to the use of a fee schedule by insuring agencies.

Patient Participation

The pros and cons of involving the patient directly in the payment for services rendered to him have been widely discussed. The alternative ways by which an insuring agency may achieve this are:-

- (1) Establishing premiums which reflect actual costs.
- (2) Notification to the patient of amounts paid on his behalf.
- (3) Routing all payment through the patient.

- (4) The patient paying a part of the fee for some services, either at the time of service or as an addition to his next premium.
- (5) The patient paying an annual sum deductible from the costs of his total care.
- (6) The patient receiving a rebate on his premium if he has had no services or minimal services.
- (7) The patient paying the full cost of his care beyond certain specified limits for certain specified services such as psychotherapy.

The alleged advantage of each of these methods are that they reduce total costs to a greater or lesser degree by reducing the number of frivolous visits. The apparent disadvantage is that they may not have the desired effect without penalizing the poor and deterring patients from making necessary visits.

The height of premiums probably does not reduce utilization. High premiums may indeed encourage people to be sure of getting something for their money, necessary or not. Some insurance plans are convinced that notification of payments keeps costs down.

Others have evidence that reimbursement of the patient is even more effective but many doctors object to reimbursement, because there is no guarantee that the money will ever reach the doctor. Plan administrators are unwilling to adopt either reimbursement or patient notification because of the extra administrative costs but, on the other hand, are anxious to employ any device which will reduce total costs.

Deductibles and rebates are illogical because they may deter people from seeking care at the beginning

of an illness, but not in its later stages (a medically unsound principle).

That personal patient-payment affects total costs is evident from Saskatchewan where the new patient fees have reduced routine office calls by 15%, but the brunt of collecting the deterrent fees unfairly falls on the general practitioners. Whether the standard of care has been adversely affected is not known, but statistics indicate that children's visits have undergone the greatest reduction.

Purists object to the patient making any direct financial contribution to the doctor on the grounds that there should be no financial impediment to anyone seeking medical advice. Their case would be stronger if the doctors were bound to accept the amounts paid by the plan as payment in full. This is not the case, for example, in Ontario where, the Ontario Medical Association believes, 40% of doctors charge their patients directly an amount equal to 10% of the Ontario Medical Services Insurance Plan (OMSIP) payment, even though no so-called deterrent fees are in force.

The public naturally prefers not to have to pay anything in the way of an extra bill, a deterrent fee or a deductible. These methods are therefore somewhat politically unacceptable, except perhaps for specified limitations.

Limitations on coverage of long, expensive treatment, such as psychoanalysis, have been set by insuring agencies for years without much complaint. It is surprising that the government plan in Ontario uses no such limits. As a result, OMSIP is paying for a considerable volume of luxury care, using funds which might be much more effectively employed in other ways.

It will be seen from the above remarks that there are proponents and opponents of patient participation in any form, and that each different method of putting it into effect also has its advocates and detractors. No decision on this matter will satisfy everybody. It can only be settled on the basis of the relative weights of the different arguments for any individual plan.

Contracts and Agreements Between Doctors and Government Plans

More heated disagreement between doctors and government insurance agencies is generated by the imposition of a contract between the two parties than by any other aspect of state-provided medical care. Doctors, especially when represented by medical associations, consider a forced contract to be conscription, and fear it will tie them forever to a rate of payment which is unilaterally decided.

Government spokesmen reply that, without such a contract, they cannot provide the public with comprehensive coverage, for, whatever fees the government pays, some doctors will extract more from their patients.

In British Columbia the development of an agreed index by which fees are periodically raised has persuaded the medical association to sign a collective agreement. This is not quite so binding as a contract.

However, in Ontario the medical association insists that it will never do this; it regards the payments made by OMSIP as a Schedule of Benefits, not necessarily related to their own Schedule of Fees, and says it will fight to retain each doctor's right to charge his own fees to the patient, regardless of the amount paid by OMSIP.

Of the other provincial medical associations, only Newfoundland has fully adopted the viewpoint of British Columbia; Manitoba, Alberta and Nova Scotia appear to share Ontario's view.

Saskatchewan's doctors also have retained the right to extra-bill their patients, and, now that they are expected to collect deterrent fees privately, more of them are collecting the 15% of scheduled fees not paid by Saskatchewan Medical Care Commission in addition to the deterrent fees. The patient therefore now pays about half the cost of each office visit.

A dispassionate observer might comment that, as long as the fee schedule and the index for its periodic revision have been agreed upon as satisfactory by both parties, the doctors have nothing to fear in a precisely-worded contract, whereas without such a contract the total cost of medical care can never be controlled.

Unfortunately, Canadian doctors, particularly after study of situations which have developed in Britain and elsewhere under socialized medicine, can never be convinced to accept binding legislation over their fees. An agreement is the best that government can hope for, and every effort to secure one should be made in the interests of both the public and the doctors.

7. THEORY BEHIND FEE SCHEDULES; RELATIVE VALUES AND JOB ANALYSIS

History

The first fee schedule for medical practice in Canada was produced about 1850, but it seems probable that for most of the history of the medical profession individual doctors set fees for their services in a haphazard way, relating them to the standard of living in the community in which they lived and the financial circumstances of the individual patient or family, with the object of producing a reasonable standard of living for the doctor at the end of the year's work. The majority of doctors worked in isolation and there was little opportunity for them to compare their charges.

Formal fee schedules probably arose from the desire of a segment of the population to "prepay" the costs of medical care. In North America they first appeared in logging camps on the west coast of the United States (J.C. MacMaster - personal communication).

Theory - past and present

It is doubtful whether any "theory" lies behind the design of present-day fee schedules. More probably they developed haphazardly from the fees charged by the majority of doctors in an area prior to the formalization of fee schedules.

The most formal attempt to codify pre-existing patterns of charges is the "California Relative Value Study". While many people believe that this study was an attempt to assess the relative values of medical, surgical, radiological, laboratory procedures in the light of the rational principles which will be outlined later it was in fact merely a codification of the status quo.

"Our effort has been to reflect going practice amongst our members. We have made every effort to resist the temptation to purposely mold or direct changes in these practices wherever definite patterns existed. In some areas, it was necessary to pioneer in the absence of a distinct pattern; but even here, we endeavoured to reflect the majority of practices or set patterns pliable enough to fit the needs.

Occasionally we found it necessary to resist considerable pressures which would have completely altered the relativity within a Section or ignored the rights of one group or unduly enhanced the privileges of another group." (Preface to Third (1960) Edition, California Relative Value Study)

As new items of medical care such as new operations, new laboratory tests, etc. have been introduced they have been added to the list and a value set on them largely by making subjective comparisons with existing procedures.

Sometimes reference has been made to the "going" fees in areas where no formal fee schedule yet exists, but this is becoming less and less possible. Often little thought seems to have been given to precise nomenclature, or arrangement.

As a result, differences in the design of fee schedules from one area to another often far exceed any real difference in the practice of medicine!

In the past more emphasis has been laid upon and more value given to surgical procedures than non-surgical items of medical care. This is understandable when one considers that until relatively recently the majority of surgical operations carried enormous

mortality and were rarely performed except for conditions which would otherwise have been fatal.

Thus almost all surgery was life-saving (when it was not life-destroying) and the appropriate glamour and money value was attached to it. This trend has recently been modified, as more and more elective surgery is done under predictably safe conditions, while "non-operating" physicians deal with and have the capacity to cure more and more life-threatening conditions by the use of powerful and potentially dangerous drugs. However, there is still a long way to go.

Theory - future?

In discussion of the factors which should be used in deriving fees, the following are usually included:

- Time
- Expense
- Skill
- Experience
- Required training
- Complexity
- Responsibility taken by the physician
- Risk taken by the patient

Time and expense can be measured. The other factors, while undoubtedly important, are not susceptible to measurement so that the part they should play in determining a fee for a particular service cannot be decided in any rational way. Skill, experience and training, and with them the complexity of services which a doctor should render, are attributes of the individual physician, not of the particular service which he happens to be rendering.

Job Analysis

Even though "time and expense" are theoretically susceptible to measurement by time and motion studies and cost accounting methods, it would be an extremely difficult thing to do and the results might not be of much permanent value in many aspects of medical practice. The results of each study would probably only apply to one practice or one group of practices.

Generalization from one practitioner to another, from one geographical location to another, or indeed from one year to the next, would be fraught with difficulties and pitfalls.

A simple example of a retrospective study of the time involved in three surgical procedures is given in Note A at the end of this chapter. It would be relatively simple to enlarge such a study to include other operations, other hospitals or other communities. The expense to which the surgeon is put in the process of undertaking a surgical procedure is more debatable. While it is true that the only immediate expense is that of getting himself to and from the hospital (all other facilities being provided by the hospital), it would be unfair to dissociate from the surgical procedure the expenses of the office and consulting practice which is necessary to "generate" the surgery.

It appears feasible and not too difficult to "cost account" the "technical" portion of laboratory and radiological procedures. The professional time required to read each type of x-ray, to perform fluoroscopic procedures, etc., etc., could be determined.

The time spent by the physician supervising the day's work in a laboratory, allotting so many

minutes for supervising the haemoglobin, so much to the cholesterol estimations, etc., etc., could also be determined.

However it must be understood that while the results would be valid for the particular diagnostic facility concerned at the time the study was done, they would be invalidated temporarily or permanently by the introduction of new machinery, expansion of floor space which initially was underutilized, employment of a new technician who initially had to be trained or did not work to full capacity, etc., etc.

The time involved in medical consultations, complete physical examinations, follow-up visits, hospital visits, house calls, etc., is probably sufficiently variable that no generally applicable statistics could be arrived at. Furthermore the relation between time and quality probably is paramount in the "non-procedural" aspects of medical practice.

A study of these aspects of practice would have to be prospective, as physicians' estimates of time spent in various activities have been shown to be inaccurate. The only available study, of a group of general practitioners, one surgeon and one psychiatrist, has been reported only in "averages" and no indication of variability is given. (1)

Application of Job Analysis to Creation of a Fee Schedule

Having decided the time and expense involved in all aspects of medical practice, if such were feasible, it might then be possible to set "fair" fees for each service, reflecting a real "relative value".

The implication is that a "fair" fee would be that fee which yielded a "fair" net income to the

physician when the examination or procedure had been performed a "fair" number of times in a year. Clearly, this requires subjective value judgments as to what is a "fair" net income for the particular doctor concerned and how many hours of remunerative practice constitute a "fair" working year; remembering that all physicians should devote time to non-remunerative study. Many also devote time to research and teaching - ideally these should be remunerated, and not from fees for patient care.

The assessment of fair income requires a judgment of the doctor's economic place in the community. (In saying this we must recognize that, where free movement of physicians is permitted, the fair reward for a doctor in community A may depend not so much upon the economic base of community A as upon the economic base and awards offered to doctors in community B which is competing with community A for physicians.)

Clearly, and this is desirable, if one retains a fee-for-service system medical incomes will vary considerably. Hopefully more efficient or harder working doctors would earn more than others in the same field of practice. Whether there should be significant differentials in different fields of practice, even though the hours and pace of work are similar, will be discussed below.

Since many items of medical care are performed only, or largely, by special groups of doctors it is clear that particular attention must be paid to the "relative value" put upon procedures in different specialties.

This requires a decision on the range of income considered appropriate for doctors in the various groups and application to these of the time and

expense studies of the procedures and examinations which they can do in a "fair" working year.

Income Differential

One cannot legitimately maintain that a doctor in one particular branch of medical practice is inherently more valuable to society (and hence merits a greater reward) than an equally well-trained and hard-working colleague in any other branch of medical practice. (This statement has to be modified to some extent to recognize the fact that emergency calls, irregular hours, non-predictable working schedules, etc., are more of a problem in some branches of medicine than in others, and that a greater reward is therefore appropriate.)

Consequently, the average lifetime earnings of doctors in different generalist and specialist branches of medicine should be similar.

Since the specialist, by virtue of a longer period of training, has fewer years in which to earn his lifetime income, and may have incurred more debts before he starts to practise, his annual income should, other things being equal, be proportionately higher than that of a generalist.

In developing this theme it must also be remembered that the age of retirement may also vary significantly. This is discussed in Chapter 5. It seems probably that the physical fatigue of surgery is likely to force earlier retirement of surgeons than the mental fatigue of internal medicine, etc., and that surgeons operating in the brain or the heart might have to retire earlier than general surgeons. Thus again, in order to achieve the same lifetime earnings, annual earnings may have to be higher.

Another factor to be considered is that when lifetime earnings are concentrated into fewer years,

the differential income tax will take a proportionately larger bite since each year's income will be larger. Such problems as higher insurance rates at the ages at which physicians become self-supporting, the fact that there are fewer years in which to save for retirement, etc., have also to be considered.

Significance of Pro-rating and Indices

Working along these lines it is believed that a fair and equitable fee schedule could in theory, be achieved. However, it must be realized that any arbitrary reduction or increase of the schedule "across the board" will produce a distortion in net incomes. This is illustrated in the diagrams shown in Note B at the end of this Chapter.

In order that the net incomes generated for physicians should remain "fair" according to the criteria discussed above, regular adjustments of these fees in the light of economic changes in the community will be necessary.

Various indices of economic changes are available

- (1) Consumer Price Index
- (2) Index of Average Weekly Wages and Salaries
- (3) Personal Income Per Capita
- (4) Disposable Income (after tax)

The Consumer Price Index and Index of Average Weekly Wages and Salaries are relevant and readily available. The Prairie Medical Services Sub-committee has recommended a Composite Index derived from these two with a 1:3 weighting, and that each Province should compare its own Composite Index with a similarly derived Composite Index for Canada.

Overall adjustments based on properly designed economic indices which take into account the appropriate percentage of physicians' expenses related to salaries, capital items, etc., do not produce the same degree of distortion as arbitrary adjustments. This is illustrated in Note C at the end of this chapter.

Any fee schedule must be judged by its effects, and the standards by which it should be judged are:

- (1) Have the people received the highest standard of medical care they can afford?
- (2) Have enough students of the right calibre been attracted into Medicine?
- (3) Have they entered the right branches of Medicine?
- (4) Have they been attracted to practice in places where they are needed, and remained in practice there?

8. COMPARISON OF CURRENT PROVINCIAL SCHEDULES OF PHYSICIANS' FEES

Any interprovincial comparison of fee schedules has to be based upon the assumption of some type of standard practice. A physician practising in conformity with this standard would receive total payments of so many dollars according to one fee schedule, so many dollars according to the next fee schedule, etc. The results of one attempt to compare fee schedules in this way are presented below.

The findings should be interpreted with caution for the following reasons:

- (1) At the present time the structure and terminology of fee schedules varies a great deal. Consequently it is not always possible to be absolutely certain that comparisons are valid. For example, in some provinces any laboratory procedure performed in the course of an office visit commands a separate fee. In other provinces payment for all simple laboratory procedures, or for laboratory procedures with a total value of less than a certain dollar limit, is included in the visit fee. Certain assumptions had to be made regarding the number of laboratory procedures that would normally be performed during an office visit of a certain type, to arrive at a comparable definition, and fee, for a "standard" office visit of that type. Similar difficulties arise from the various rules regarding other diagnostic or therapeutic procedures which may, or may not, be subject to a separate fee if performed in the course of an office visit, home visit, or consultation, etc. Alternatively, there are a number of instances where the visit fee may be included in the fee for a relatively minor procedure. The range and definitions of so-called

"composite fees" vary from province to province. Again it becomes necessary to estimate the number of diagnostic and visit services that may be included in a given type of obstetrical or surgical procedure to arrive at comparable data. Fees for surgical assistance and/or anaesthesia services are determined in some provinces by relating them to a specified procedure. In other provinces they are calculated by using a basic fee, varying with the type of procedure, plus an allowance for the time actually spent. In other provinces the fee is calculated primarily in terms of time required. Consequently in such cases it becomes necessary to have fairly realistic estimates of the average time which an anaesthetist or surgical assistant may spend in connection with various types of procedures.

Currently only the fee schedules of the medical associations in Ontario and Newfoundland are virtually identical in both concept and fees. It is understood that the Prairie Provinces are attempting to improve the comparability of their fee schedules. The ability to make realistic comparisons of fee schedules may become an important tool in devising and implementing measures to influence costs, quality of care, distribution of physicians, etc. Provincial medical associations should be urged to work towards greater uniformity regarding the concepts, definitions and terminology incorporated into fee schedules.

- (2) The use of a "standard practice" in comparing fee schedules is based upon the assumption that differences in fee schedules have no influence upon patterns of practice and billing habits of physicians. There are indications that this may

not necessarily be the case, and that the structure, and the relationships among fees, may have a noticeable effect upon the way in which physicians conduct their practice.

- (3) A "standard practice" is an artificial device. Given the differences not only in fee schedules, but also with respect to the composition and economic and physical health of the population, the number and distribution of physicians by specialty and location, etc., the standard type of practice is not likely to provide a very accurate picture of the situation in any one province.
- (4) The comparisons in the attached study measure differences in fees only. It should be understood that the fees in a fee schedule are only one of the items that may determine payments actually received by physicians, and consequently the income of physicians and the total costs of services. Substantial modifications may be introduced by a variety of factors.

In a province with relatively low insurance coverage, and a modest level of economic well-being, physicians may only be able to collect, on the average, lower fees or a lower proportion of their fees. In a province with universal insurance coverage, policies with respect to assessment rules and proration may substantially modify the impact of fees. For example, in Saskatchewan the implementation of assessment rules involving not just an interpretation of the fee schedule, but deliberately designed to circumscribe the effect of certain fee schedule rules, substantially reduced the cost impact of the latest fee schedule revision. In addition, payment to the majority of

physicians is made at 85 per cent of the amounts shown in the fee schedule.

In Ontario, on the other hand, payments are made at 90 per cent of the fee schedule by OMSIP, and at 100 per cent by a number of voluntary programs. That is, while the "all services" figure in Table 34 would suggest that the fee schedule in Saskatchewan tends to be, on the whole, somewhat higher than in Ontario, incomes of physicians, as well as per capita expenditures on physicians' services, are higher in Ontario than in Saskatchewan.

- (5) The weights selected in arriving at the "standard practice" used in these comparisons, are based upon the sources mentioned in the methodology. In particular, the distribution among general practitioners' and specialists' services is almost exclusively based upon the experience in Saskatchewan. The ratio of specialists to all physicians in Saskatchewan is relatively low. That is, the weight given to specialists' services in the combined index may be on the low side.

On the other hand, in Saskatchewan specialists are expected to confine their activities to work in their own specialty. Given the greater relative supply of specialists in other provinces, it may well be true that specialists in the latter tend to do a certain amount of "general practice" work. Consequently the weights used may provide a fairly accurate reflection of the actual workload by specialty.

As mentioned, the weights by type of practice are based upon the operation of 6 major Trans-Canada Medical Plans member agencies. While most of these

plans provided quite comprehensive coverage, the type of persons insured by such plans, especially in terms of the age-sex distribution, was not fully representative of the entire population in each province. To the extent that utilization patterns tend to be influenced by the composition of the covered population, the weights used in the study may contain some bias.

- (6) As mentioned in each of Tables 34, 35, 36, and 37, the number of fee schedule items actually employed falls short of the total number of items in fee schedules. Even in terms of value more than 20 per cent of the items in a fee schedule are not directly measured by means of the indexes.

That is, assumptions had to be made regarding the extent to which fees that were actually compared provided a realistic picture of the total relationships. On the basis of limited studies carried out, it is estimated that the list of items would have to be increased by large numbers to produce relatively small improvements in accuracy.

Since the comparisons shown in Table 34 to 36 were prepared a number of fee schedule changes were introduced or are planned. Effective January 1, 1969, the fee schedule for British Columbia was revised. The cost impact of this revision amounts to approximately 7 per cent.

Revised versions of the fee schedules of Ontario and New Brunswick were introduced on April 1, 1969. In both cases the cost effects are estimated to come to about 10 per cent. Finally, changes amounting to an overall increase of about 7 per cent will be introduced in Alberta on July 1, 1969.

Purpose

The purpose of the project is to measure price levels by comparing the fees contained in the official fee schedules of different provincial medical associations.

The indexes are intended to measure pure price levels, recognizing these as one element in the costs of physicians' services. The results are independent of considerations of the impact, upon costs, of interprovincial differences in the volume of services, differences in rules governing the application of fees under medical care insurance programs, and differences regarding the percentage of fees actually paid by insurance programs.

Data Sources

A difference in the fee for a rarely performed service does not affect total costs to the same extent as a similar-size difference in the fee for a frequently performed service. Consequently the preparation of indexes requires that items be "weighted" to reflect their likely impact upon total costs.

Detailed data used for weighting purposes were obtained from several large insuring agencies, including the Saskatchewan Medical Care Insurance Commission, Maritime Medical Care (Nova Scotia), and Medical Services (Alberta) Incorporated. The data were in the form of specific use and cost figures for each fee schedule item of service.

Cost data for the major sub-divisions of services were available from the Saskatchewan Medical Care Insurance Commission and from Trans-Canada Medical Plans in respect to major doctor-sponsored plans. These data were used to link type-of-service indexes.

Stages

Using data from these sources the project was undertaken in several stages: (1) the preparation of preliminary "pilot" indexes for certain provinces through use of maximum feasible range of items; (2) the development of indexes based on a minimal representation of items consistent with reasonable results; (3) the preparation of interprovincial indexes (see Tables 34 to 36).

Type-of-Service Sub-Groupings

The indexing of physicians' fee schedules was constructed from indexes first prepared for type-of-service sub-groupings. This was done (1) in order to provide maximum detail for comparative purposes, and (2) to overcome, and adjust for, problems regarding the definition and comparability of items from different fee schedules. On the other hand, use of type-of-service categories necessitated the development of the "linking" system described below.

Item Selection

The selection of items to be included in each type-of-service sub-grouping was not done on a random basis, but was determined by: (1) their relative importance in terms of value weights; (2) the availability of definitions of acceptable uniformity of each item; (3) the availability of comparable utilization data for weighting purposes; (4) the availability of reliable data for price estimation where fees are determined by such formulas as "basic fee plus time"; and (5) the number and range of items required to produce reliable results for a sub-grouping (as judged by comparison to results of earlier exhaustive indexing of items for certain schedules).

Differences occurred in the extent of sampling required to produce reliable indexes for the various type-of-service sub-groupings. Generally a more exhaustive sampling was found necessary for visits and consultation items than for items with procedural definitions. For example, in the case of "obstetrics" the use of the fees for a delivery by a general practitioner and by a specialist respectively was adequate. Expansion of the obstetrical list up to 12 items did not appreciably affect the result.

The list prepared in this way contains about 350 items (see Table 37). The value of the specific fee schedule items used in the list accounts for close to 80 per cent of total payments made to physicians by at least one medical care insurance program in Canada.

Weighting

Weighting of items within each type-of-service sub-grouping was based upon a common and uniform "market basket" of weights which was developed from the detailed statistics of the above mentioned large insurance plans (see "Data Sources"). To allow for differences in the structure and terminology of the various fee schedules, some relatively minor departures from uniformity had to be made in a number of cases. For example, not all fee schedules distinguish between major, minor, and repeat consultations, or between initial and subsequent office visits.

Linking of Type-of-Service Sub-Groupings

The indexes for the various type-of-service sub-groupings were then "linked" to arrive at "all services" indexes. The linking was accomplished by preparing a uniform "market basket" of weights based upon the type-of-service data of six major Trans-Canada Medical Plans -- Maritime Medical Care (Nova Scotia),

Maritime Hospital Service Association (Maritime Provinces), Physicians' Services Inc. (Ontario), Manitoba Medical Services, Medical Services (Alberta) Incorporated, and Medical Services Association (British Columbia).

In cases where the latter lacked sufficient detail, e.g. with respect to surgical assistance services and the distribution of services between general practitioners and specialists, the data had to be supplemented by information published by the Saskatchewan Medical Care Insurance Commission.

9. HOW FEE SCHEDULES MAY INFLUENCE PATTERNS OF PRACTICE

To put this subject in perspective one should consider the recent historical background of the changing interest in provincial fee schedules across Canada. One can easily divide this into four chronological periods, namely: prior to 1948, 1948 to 1962, 1962 to 1968, and the current period.

Prior to 1948 fee schedules were used really only as a guide and were referred to only occasionally, for example, in determining fees associated with litigation. With the advent of the physician-sponsored plans in Canada it became necessary for the first time to develop some clear policy rules amplifying the definitions of certain types of medical services with regard to fees.

Generally these were settled by peer decisions and most policies contained considerable flexibility. The next era commenced with the inception of the Medical Care Plan in Saskatchewan in 1962, at which time the government felt that certain refinements in the rules were needed in order to automate the process of payment, and accordingly an attempt was made to incorporate in the assessment rules the general rules which had been applicable previously under the provincial plans associated with Trans-Canada Medical Plans (TCMP) (Group Medical Services and Medical Services Incorporated).

From 1962 to 1968 and particularly in 1966 and 1967 the profession and the government in Saskatchewan entered into extended meetings in an attempt to rationalize the extrapolation of the payment rules which had been taken from the TCMP plans and incorporated in the government plan.

In 1968 a whole new era was created when for the first time in Canadian history a government agency, namely the Saskatchewan government, unilaterally elected to record as a statute (regulations) the majority of the payment rules which had been in operation since inception of the plan in 1962.

The facility with which this was accomplished creates a new set of ground rules as far as the profession is concerned in controlling in total, its own fee schedule. In reviewing this whole subject one must draw a line between how a fee schedule influences patterns of practice as opposed to how a fee schedule influences patterns of billing.

Although there is some interplay between these two situations, this position paper is intended to deal with the influence on patterns of practice only, by suggesting some of the common examples.

Although current fee schedules consist essentially of a listing of many procedures, it is really the enlargement of the preamble and assessment rules which have assumed increased importance in the application of the fee schedule. The majority of Canadian fee schedules list a differential between the fees allowed to specialists and those to general practitioners. This is possibly only a minor factor in encouraging specialty practice vs. general practice.

The true influences on the patterns of practice really are contingent upon the interpretations and the applications which a third party paying agency establishes. The single biggest factor which stands out in this area is the instances which are created for "à la carte" billing.

The most prevalent example by volume would be the inclusion or exclusion of common laboratory tests

and/or diagnostic procedures from visit fees. A further example in the surgical field relates to the inclusion within, or exclusion from, within the composite fee for an operation of the pre-operative consultation and routine post-operative care by the surgeon. Another example occurs with some multiple surgical procedures, particularly in such areas as intra-nasal surgery.

Over the last twenty years and increasingly of late, many revisions of the fee schedule have been based alternately on the inclusion or exclusion of certain procedures in relation to a basic fee. This has served as a relatively simple and fairly common technique which has no real rationale except to end up with an increased total fee.

One of the most significant influences of the fee schedule on the patterns of practice of primary care physicians, particularly general practitioners, is the obvious discrepancy between the fees allowed for various services. If, as is the custom these days, one attempts to measure the value of a service on the basis of time required to carry out the service, it becomes very obvious that it is much more economical from a physician's standpoint to see patients in the office at four or five dollars a call as opposed to elective and even emergency home calls at twice that fee.

The marked increase in the use of diagnostic laboratory procedures, without any real change in fees, has made it most attractive to establish private laboratory facilities.

The introduction in the fee schedule of the "detention fee" and fees for "supportive care" have had an effect on some physicians' practices. In the case of supportive care in the hospital some physicians will certainly take time now to make "courtesy" calls on

hospital patients when doing rounds which they would otherwise tend to omit unless being paid.

In the case of detention fees it is questionable whether the introduction of this fee schedule item has changed practice very much, but rather that the recognition of such a service by tagging it with a fee, has drawn the attention of many physicians to the fact that they can now charge under this item for situations which were not adequately compensated for before.

Some fee schedules have a distinction between the fees to be charged for bilateral or multiple-staged procedures, dependent upon whether it is done on the one day or split between several days. Some physicians have accordingly arbitrarily elected to carry out part of the treatment on one day and have the patient return for continuation of treatment on one or more subsequent visits.

Most fee schedules list a very slight differential between an initial visit and a repeat office visit. To many physicians, particularly general practitioners, the initial office visit fee is inadequate for the time spent and with the slight differential between the initial and subsequent visit there is an established tendency to recall patients for repeat minor visits in order to obtain adequate remuneration for the total care of an episode of illness.

A further instance of influence on the pattern of practice is the stipulation that in at least one fee schedule, that with an established differential in the fees to be paid for specialist and non-specialist x-ray services, the governmental paying agency has elected to recognize the payment only for x-ray services rendered by a specialist.

Although one might argue that this might tend to improve the quality of the service, it nevertheless directs the pattern of care within the limited radiological field, which it has been estimated has a current shortage of at least 150 radiologists in Canada. In much a similar fashion it is also a developing pattern that specialists' fees should be payable on referral only.

There are some obvious economic advantages in the physician controlling the locale where the service is rendered. Most fee schedules list a fee for a visit to the hospital emergency at the same level as an office or home call, depending on the locale of the physician at the time of the call for service.

Fees for office and home calls traditionally have been expected to include a certain amount for allowable overhead. Since there is no overhead charged to the physician involved in seeing a patient in the hospital emergency it would seem more economically sound as well as convenient for patients to be seen at that site rather than the physician's own office or the patient's home.

One might suggest that changing circumstances and demands for changes in patterns of practice have had their influence on the fee schedules themselves, although somewhat tardily. Probably the best example of this is the addition to the fee schedule to provide for remuneration for the "team approach" (e.g. intensive care unit).

One cannot help but be impressed by the fact that changes in the interpretations in the actual assessment rules themselves in fee schedules have come about by introduction of prepaid service plans and more recently the requirements to establish arbitrary rules to assess an inexact and variable type of service, which

will allow payment procedures to be carried out on a fully automated computer basis.

The situation has been further complicated by the fact that the profession does not have the same control over payment rules when governmental paying agencies take over.

The following statistical report from Maritime Medical Care Incorporated, Nova Scotia, shows the changes in utilization of fee schedule items which occurred following changes to the allotted fees. Almost without exception, an increase in the fee was followed by an increase in utilization and a decrease in the fee by a decrease in utilization. The most striking example is in Table 2 on page 5 of the report, in which it is shown that a 65% increase in the fee for Sunday calls resulted in a 121% increase in utilization, while at the same time there was a 8% decrease in weekday calls.

10. OVERUTILIZATION OF MEDICAL SERVICES

The first problem in discussing overutilization of medical services is to define what is a proper level of utilization in a community. This is probably not possible and one can merely consider those factors which have been shown to increase or decrease utilization. They have been reviewed by McMillan¹ and many others.

Availability

Clearly medical services cannot be used unless they are available. Parkinson's law may be rephrased: "the demand for medical services expands so as to fill the capacities of the physicians available to supply it".

Nature of Services

Services required to treat major, or life-threatening conditions are only required when these conditions occur. In a given population of unchanging age distribution the incidence of heart attacks, perforated gastric ulcers, appendicitis, etc., is likely to be constant or slowly changing. On the other hand, the utilization of diagnostic services, office calls, and outpatient services in general may change rapidly. The amount of care which people may desire for chronic non-lethal conditions or for minor symptoms is potentially unlimited and depends upon the degree of sophistication of the society in which they live and their economic circumstances, as well as upon the availability of the services.

Educational Level

There is a demonstrated increase in utilization of medical services with increasing levels of

education and income. Therefore, as education and income improve throughout society, demand for medical services may be expected to increase. If the public is educated to expect regular periodic examinations, cervical cytology, etc., then a significant demand for these services will arise.

New Techniques

Tremendous advances in such specialties as laboratory medicine, radiology, anaesthesia, psychiatry, cardiovascular and chest surgery, and neurosurgery, as well as the proliferation of sub-specialties, have resulted in services being available to be utilized, which previously did not exist. The fashionable "team" approach to medical care is also more expensive. Presumably all these factors have improved the quality of medical care.

Age

Old people develop more chronic illnesses and therefore require more medical services than the young. As the general age of the population increases a greater demand for medical services may be anticipated.

Geography

There is evidence to suggest that persons in rural areas use medical services less than those in urban areas, and since the population is rapidly moving from country to city this could conceivably result in an increase in utilization. However, the presently observed differences could result from the other factors mentioned such as availability of services, education and income level, etc.

Availability of Medical Insurance

There is much evidence that medical services are used more by those who carry medical insurance than by those who do not.^{2,3} The converse of this -- namely that people may be deterred from obtaining necessary medical care because of the lack of an insuring mechanism -- is obviously the reasoning behind the widespread role of governments in the provision of insurance against the cost of medical services.

Whether the type of insurance coverage affects utilization is not certain. It is generally held by commercial insurers of automobiles, personal property, etc., that "no deductible" policies result in requests for repair of trivial damage which the insured would not bother about if he were personally responsible.

Although a commonsense view of the frailties of human nature would tend to support this view, it must be admitted that there appear to be no documented studies which prove it conclusively.

Darsky⁴ in 1958 made a comparison between citizens of Windsor, Ontario who subscribed to the comprehensive, first dollar coverage Windsor Medical Services, and those who subscribed to limited plans, or had no insurance.

He concluded that "After adjusting for differences in the composition of these three groups ... it is clear that Windsor Medical Services subscribers both initiate care more often and receive more services once care is sought." Unfortunately the detailed data were not included in the published paper.

It seems probable that demands for and urging of "elective" medical care are likely to be greater when both patient and doctor have a "blank cheque"; that is,

when the effect of the price of medical care has either been entirely removed or deferred into the future, to be shared with the community at large. This will be discussed further in Chapter 11 Control of Overutilization.

Over-Utilization

A discussion of over-utilization of medical services requires a consideration of the concept of "need" and "demand". Badgley⁵ points out that while there is much statistical information on the medical services received in Canada (which he equates with "demand") there is little or nothing known about the health "need". He believes that there "are vast unmet health needs afflicting the Canadian population". This may be true, but at the same time many physicians practising amongst insured, urban populations, feel that the "demand" for medical services often exceeds the true "need".

There is probably nothing fundamentally irresponsible in this. It simply reflects an increasing awareness by the public of what a modern standard of medical care really is, and of the hazards of postponing medical care. It is analogous to the rising utilization (and, sometimes, wastage) of all other services in North America.

There is as yet no good evidence that the removal of all financial barriers to access to medical care, as in Britain in 1948 and in Saskatchewan in 1962, has had any significant effect upon the health of the population.^{6,7}

This could mean that the previous systems for providing health services in advanced countries such as Britain and Canada were adequate to meet the medical needs of most of the population and that the increased utilization which has occurred since the introduction of

the medical care programs is largely a reflection of increased demands for services which are not necessary for the improvement of health.

11. CONTROL OF OVERUTILIZATION

It will be clear from the chapter on overutilization of medical services that it may not be easy to determine when "overutilization" is occurring. It is important, also, to distinguish between overutilization (by patients) and overservicing (by physicians). If present both may need to be controlled, and the mechanisms of control may be different, but are not necessarily so.

The presence of overutilization or overservicing cannot be established objectively because medical judgment is required to decide whether or not a service is necessary.

The recognized approaches to detecting overutilization and overservicing are to study the patterns of patient utilization and to study the patterns of physicians' practice. All prepaid plans appear to study physicians' patterns; few study patients'. With the availability of computer storage and retrieval of data it is relatively simple to prepare these patterns, but it is not so simple to assess their significance. Clearly the patterns of practice of doctors must be considered in groups according to their specialties and according to the size of community in which they live. There is no point in comparing an ophthalmologist with a cardiovascular surgeon.

There is no point in comparing a general practitioner living and practising in a community of 2,000 people with a general practitioner practising in a large urban metropolis. The same is true when studying patient utilization.

Having made a statistical analysis of the legitimate groups, it is possible to pick out individuals whose pattern deviates from the norm by some predetermined amount, such as more than two standard deviations. It is of interest that prepayment plans only seem to take

an interest in those whose pattern is excessive by this degree, not in those who underutilize or underservice.

Yet, underservicing or underutilizing may be just as serious, from a sociological point of view as excessive use. It is, however, not costly to the plans!

By definition, only $2\frac{1}{2}\%$ of physicians can be more than two standard deviations above the mean, and in most cases there is a ready explanation. For example, in a study of internists a particular individual may be found to order barium examinations excessively frequently. The observation that the individual's sub-specialty is gastroenterology immediately explains this deviation.

Experience has been that merely pointing out to the individual the way in which he is different from other doctors with whom he identifies himself is sufficient to make him consider his pattern of practice and, in so far as it is under his control, it is likely to be corrected. When a physician is persistently out of line, various taxing formulas have been used to limit future payments to him. This action is required in a fraction of 1% of doctors servicing any single plan.

Patient Overutilization

A detailed study of high utilization families has been made in Saskatchewan.¹

(A) 205 families received services in excess of \$800. All but 8 were readily explained by the need for major surgical operations in one or more individuals in the family. The remaining 8 families had a total cost of less than \$10,000 (a minute fraction of the Commission's \$20,000,000 total expenditure on medical services) and there was no certainty that all of this was unnecessary care.

(B) 510 families received over 150 services in a year. Total cost was \$252,500 - (1.25% of the total costs for the year.) However, more than \$200,000 was accounted

for by hospital care of elderly patients, surgery and anaesthesia and obstetrics. Again, there was no evidence that the remaining \$50,000 was spent unnecessarily.

(C) 1,332 families received services from more than 7 physicians. Only 34 (2.5%) also fell into the high-cost or high-utilization groups.

When continuous unexplained overutilization occurs, non-governmental plans can take disciplinary measures, such as not renewing the contract, or increasing the family or group premium. However, these options would not be available to a compulsory government plan.

Physician Overutilization

It is clear that overservicing or overutilization of sufficient degree to be detected by the statistical means now used by prepaid plans is infrequent, and that its control would make little impression on total costs. Nevertheless, the knowledge that medical review of patterns of practice is being regularly undertaken may have a restraining effect on doctors who might otherwise be tempted to overservice their patients.

A number of approaches can be taken to limit utilization. For example:

(A) Limiting the number of examinations which are permitted in a particular year e.g. complete physical examination, refractions. This rationing may not work: experience with rationing in Britain suggested that some people took their whole ration - e.g. of candy - even though they did not really want it and decreased purchases when rationing ended.

(B) Limiting the number of laboratory services which are permitted - some American plans have a limit of \$100 or \$200 per year on laboratory and radiological services.

(C) Making the services unavailable. For example, hospital beds cannot be used unless they exist. If sophisticated laboratory and x-ray facilities are not available, certain investigations cannot be done. (However, this may prove expensive in the long run, if patients are sent elsewhere to be investigated.)

(D) Reducing the number of personnel so that extremely long waiting lists develop.

If the object is only to control costs, and not utilization per se, other methods are available.

(E) Payment by salary or capitation fee, irrespective of the number of services rendered. (Both methods are used in Great Britain)

(F) Keeping premiums (or other income) relatively constant and reducing the proportion of the fee schedule paid as utilization rises (i.e. variable pro-rating). Total costs therefore do not rise. This method had been regularly used by Manitoba Medical Service prior to July 1968, and was attempted by the Department of Indian Affairs in 1968. Such an approach can have a disastrous effect upon the quality of medical care.

The real potential for reduction of overutilization and costs is to try to reduce servicing and demand in the majority group which is setting the norm. Table 38 indicates that beneficiaries receiving more than \$500 worth of services in a year accounted for only 4.4% of total costs and Table 39 shows that families receiving more than \$500 worth of services in a year accounted for 8.2% of total costs.

Even 50% reduction in these (and as has been shown by the Saskatchewan study of High Utilization Families, this cannot reasonably be expected) would not result in major savings. On the other hand, beneficiaries receiving between \$25 and \$500 worth of services in a year (Table 38) accounted for 78.6% of total costs

and families receiving between \$25 and \$500 worth of services in a year (Table 39) accounted for 86.5% of total costs. A 5 or 10% reduction in costs for those groups, if feasible, would result in much more saving.

Clearly a prime requirement for the general control of utilization, whether it is initiated by the physician or by the patient, is that both of them should have an incentive to control utilization and to control costs.

It is unreasonable to expect a physician to discipline a patient who requests services unless these are extremely unreasonable since he will merely alienate and lose the patient. The patient is paying for the services through taxes and premiums, and who is the doctor to tell him he cannot have what he wants? Similarly it is unreasonable to expect the patient to attempt to dissuade the over-enthusiastic physician, unless he has some reason to do so.

It has been often suggested that only by having some direct financial involvement on the part of the majority of the patients can widespread economy be encouraged. The various forms of "patient participation" are discussed in Chapter 6.

Recent experience in Saskatchewan and Manitoba demonstrates that this approach appears to work. Table 40 illustrates a reduction in utilization in Saskatchewan coincident with introduction of utilization fees in 1968.

Analysis of services for the third and fourth quarters of 1968 (utilization fees were introduced on April 15, 1968), when compared with figures for similar quarters in 1967, show a much greater reduction in overall utilization, affecting the majority of services.² The change is even more striking when compared with anticipated utilization for the third and fourth quarters of 1968.²

Tables 41 and 42 show changes in utilization of services under Manitoba Medical Services in the past few years.

In July 1968 patients became liable to "billing to schedule" which could amount to 25% of the fee. No precise figures are available of the extent of billing to schedule, but it is estimated that not more than 10% of patients were affected. For the remainder, co-insurance was potential, not actual. Patients on Social Allowance Medicare (S.A.M.) were not exposed to direct billing.

The data in Tables 40-42 show a drop in utilization of many items of medical care coincident with the introduction of a degree of patient participation, actual or potential. They do not, and cannot, prove a cause-and-effect relationship. Drops in utilization have occurred at other periods in the history of Manitoba Medical Service (M.M.S.), for no apparent reason.

There seems no logical reason why there should be any objection to direct financial involvement of those patients who can afford it (provided that the method used does not discriminate against one type of doctor, e.g. general practitioners, or against one type of patient, e.g. the poor or the chronically ill), except the assumption that any level of payment by the patient at the time of service will result in denial of necessary medical care. It is questionable whether there is any good evidence³ that lack of money keeps people away from necessary medical care when that medical care is geographically available.

Every doctor has patients whom he treats for reduced fees or no fees at all. Doctors do not demand to be paid before seeing patients; in fact bills are usually not sent until weeks afterwards. Free outpatient clinics are available in all major cities. In fact experience

in Britain and in M.M.S. and other paid-in-full plans is that for a variety of social reasons some people will neglect serious illness even though they have absolutely complete coverage and ready access to physicians.

Clearly, it would be socially undesirable if patients were forced to make a choice between necessary medical care and other essentials of living. However it is equally clear that for the majority of working self-supporting Canadians the costs of medical care are comparable with sums of money, spent on luxury items such as tobacco, alcohol, etc.

In 1967 two thirds of families belonging to M.M.S. received less than \$100 worth of medical care in the year⁴ and most of this was for services received in doctors' offices, not involving loss of work or earnings. In the same year the receipts of the Manitoba Liquor Commission exceeded \$70,000,000, more than \$70 for each man, woman and child in Manitoba.

It costs \$200 a year to smoke a package of cigarettes per day, and about 40% of adults appear to smoke this amount. Similar sums are spent in beauty parlours, on cars, on entertainment, etc. We are fortunate to live in a society where most people can afford these luxuries, but it does not make sense to claim at the same time that most people need help to pay for basic medical services which cost far less than these luxuries.

12. THE INFLUENCE OF MEDICAL PRACTICE ON HOSPITAL ADMISSIONS

There is some evidence that good group practice with adequate diagnostic workup in the group clinic will reduce hospital admissions and extensive stay in hospital for diagnostic work. A view has also been expressed that there is less surgery in particular types of group practice.

It perhaps is unnecessary to state that in the traditional methods of the delivery of medical care more and more concern has been expressed by physicians, patients, taxpayers, and governments over the continued increase in the cost of health care services. A great deal of energy and time has been expended in trying to understand better the factors which cause these costs to rise, in trying to justify these increased costs and at the same time to develop programs and practices which might stabilize and possibly decrease the cost of health care. The question of price and delivery are inextricably entwined and no discussion of price can possibly avoid some reference as to how services will be delivered.

In approaching this problem, one must think first of the alternative methods of delivering traditional care. If one can organize the profession to provide ambulatory care, and by this means reduce the need for hospital care, it is obvious that there would be a dollar saving in the provision of, and financing of hospital beds.

With hospital costs increasing with each day, such savings could well be significant. The savings could be used to finance ambulatory service or be used elsewhere in any future health care system. The present separation of programs of financing hospitalization from those financing primary medical care tend to make

hospitals and hospital planning agencies overlook the economies that can be provided with coordinated planning.

One of the biggest problems has been the provision of alternative levels of care for patients in all categories, allowing the free flow of patients from one level of care to another as the need presents itself. The physician in the community usually looks to his community hospital and its organization and staff services with tunnel vision, so that he has been often unable to organize himself, his patients, and his needs in the most practical and economic fashion.

Group Practice

"Doctors, Patients and Health Insurance - the organization of financing of medical care" by Herman Myles Summers and Anne Ramsey Summers, published in an abridged edition, by Anchor Books, Doubleday and Company Incorporated, Garden City, New York, in 1962, is a classic of its kind, and contains a valuable amount of provocative information.

One aspect of the study concerns the experience of the various closed panel practices which are available in the United States, including the Group Health Association of Washington, D.C., The Group Health Co-Operative of Puget Sound, The Group Health Insurance, G.H.I., H.I.P., The Kaiser Foundation Health Plan, and so on.

These plans have "always taken the position..., that the net cost of their coverage was lower because they delivered a larger and better package, and thus the total medical outlay of the family was less."

These closed panel practices charge premiums, assume responsibility for the organization and quality of care, are primarily health oriented and emphasize preventive medicine and early treatment. It is alleged that they can, and apparently do control hospital use more effectively.

The H.I.P. Statistical Report, which is a summary of services provided by the 31 medical groups affiliated with the Health Insurance Plan of Greater New York, concerns their 1966-67 enrolment and utilization statistics.

It states, "One of the significant aspects of medical care utilization amongst H.I.P. members has been their low hospital utilization rates. This finding has been reported previously based on experience during the late 1950's (1957, 1958 and 1961 statistical reports). The largest and most comprehensive of the studies conducted on this issue compared city employees and their dependents enrolled in H.I.P. - Blue Cross, with other large employment groups of persons covered by Blue Shield - Blue Cross.

The hospital admission rates in the study year 1955 were 81.1 per thousand, and 93.9 per thousand for H.I.P. and Blue Shield members respectively (adjusted for differences in age - sex composition). Most recent data for city employees and their dependents enrolled in H.I.P. indicate that there has been almost no change in the hospital admission rate since 1955; in 1962 it was 78.1 per thousand, and in 1964 it was 84.0.

On the other hand, hospital rates in the general community have slowly increased over the ten years, 1955 - 1964. Comparatively low hospital utilization is not unique to H.I.P. Prepaid group practices throughout the country have substantially lower rates than Blue Shield programs as demonstrated by the data for persons insured under the Federal Employees Health Benefits Program during the period 1960 to 1965."

Tables are provided in the report in support of these statements, which also have the backing of statistics prepared by the Saskatchewan Community Clinics and the Group Health Centres in Sault Ste. Marie and St. Catharines, Ontario.

The report is also of interest in terms of information concerning the use of visiting nurse services, and the special research projects carried out by H.I.P. as part of the attempt of this group to provide additional information which will improve the type of coverage being provided. Such research programs include studies on coronary heart disease, breast cancer and psychiatric care.

As pointed out by Dr. Milton Roemer in his summary of studies on group practices in the U.S. (New England Journal of Medicine, May 1st, 1969), some of the statistical comparisons which have been made are open to criticism, and it is entirely possible that more exhaustive and better controlled studies of the various methods of delivery of care are required.

It seems at present that group practices are more economical than solo practices only when operated by salaried doctors who have no financial incentive to admit patients to hospital. That there should be experimentation and study is one of the themes presented by the report of the special committee on group practice, sponsored by the Canadian Medical Association, and published in 1967.

This Committee explained that "the basic premise for this study has been that regardless of individual points of view, a closer association of doctors in medical practice has gradually been developing - partly as a counter-movement or response to the increasing fragmentation of medical knowledge into special areas or convenience of practice with respect to time off for week-ends, holidays, and continuing medical education."

However, the report also says that "there will always be a place for the solo practitioner. There are advantages and disadvantages to both group and solo practice." Between these two extremes there must be an attempt to find a common ground and to make it possible

for both the solo practitioner and the group to function more efficiently, and where possible, more economically.

To this end, there must be variations in the methods of payment to physicians, and while the incentive and tradition of fee for service is to be upheld and respected there may be situations in which this traditional method is not applicable. Physicians and others concerned with the payment for medical care must approach the problems associated with this changing venue, unemotionally and with the interests of all concerned in view.

While there seems to be some agreement that group practice is one of the means by which more economy can be achieved, there is a small note of warning to be sounded.

In one community in British Columbia which had long had the services of a large multi-specialty private group and had achieved excellence in both the delivery and the quality of the care provided, a schism developed within the group and some of the members left to set up a rival group in the same community.

While one is, perhaps, used to the competition between individual physicians for practice, and while this competition may be a healthy situation in the market place, in the particular community in question this dichotomy created a situation which almost bankrupted the medical care plan in the area.

Over a period of time, with the two competing groups each striving to achieve a greater and more efficient quality of service for the available patients, the cost of providing that service, the number of services, the personal cost per patient and the total cost of insuring the community reached figures which endangered the entire premium structure and threatened the collapse of insurance in the area.

This example is only mentioned to point out that all of the features of all kinds of group practice are not necessarily the complete answer to increasing costs.

Patient participation in medical care costs appears to reduce hospital admission rates. In Saskatchewan the introduction of utilization fees was followed by a drop of 3.8% in hospital admissions, but this may be only a temporary phenomenon.

If we have any other specific examples of situations in which there are changes in medical practice which can effect savings, these lie in the area of ambulatory care. Three examples of medical, surgical and psychiatric ambulatory care services in which there appear to be very realistic dollar savings to be achieved are described below.

Day Care Medical Services

One hospital in British Columbia has set up a diabetic day care service. The most recent statistics from this service indicate that in 1968, there were a total of 135 patients managed in some 23 sessions. It is reliably estimated that 40 of this number would have formerly have been admitted for stabilization or re-stabilization of their diabetes, requiring an estimated stay of 9.1 days each.

From these data the hospital has calculated that some \$12,820 in hospitalization costs have been saved by the day care program. The referral to this program came from some 54 physicians and from a variety of regions and the cost of the program in terms of laboratory and other charges was minimal.

Day Care Surgery

Day care surgical services have been an insured hospital benefit in British Columbia for slightly

more than a year. While we do not have figures which would project the impact from all or the majority of the hospitals in the province, the experience of one particular hospital is interesting and encouraging.

This hospital has a rated capacity of 512 beds and fortunately had an area in the hospital which could be used for the retention of day care patients, as well as a large and flexible operating suite which could accommodate a sizable day care surgical load. In addition, of course, the administration and medical staff of the hospital were enthusiastic in their promotion of this program.

As a result of these factors the following results were obtained in 1968: operating room procedures for in-patients, day care and out-patients 12,386; day care procedures (February 21 onward), 2,921 (of these 2,194 were done under general anaesthetic, 296 were done under local anaesthetic, 17 had no anaesthetic, and 414 were cystoscopic examinations with a variety of anaesthetic agents).

In this hospital, therefore, almost 25% of surgery was carried out on a day care basis, and it should be noted that day care was provided for less than a full year. The hospital has estimated, and the B.C.H.I.S. would agree, that almost all of the cases done on the day care program formerly would have required at least two days each of in-patient care.

The Hospital Insurance Service established a rate of \$25.00 for payment of a day care surgical claim, \$2.00 of this being the responsibility of the patient. It was understood at the inception of the day care surgical program that this was an arbitrary rate, and was not the result of a close cost analysis. The hospital whose statistics have been recorded above has costed the day care surgical case at approximately \$50.00.

This cost may be judged against the hospital's in-patient per diem rate of \$41.50, or an average of \$83 per short-stay surgical case. If this hospital's experience of 3,000 day care surgical cases for 500 beds could be projected to the experience one might expect from all British Columbia hospitals, then the savings of patient-days in hospitalization would be considerable.

Day and Night Care Psychiatric Services

The University of British Columbia has recently opened the first unit, a psychiatric wing, of its Health Science Centre. In the negotiations which preceded the opening of this facility considerable difficulty was experienced over setting a per diem cost for all of the services related to this unit.

These costs included not only in-patient care, but day care, night care, short-stay emergency care and ambulatory care of a brief nature. In addition, there were charges against the per diem rate which were related to clinical salaries, teaching and research. It was possible to demonstrate mathematically that per diem rates per se do not present a true picture of all of the services provided by such a unit. Patients who are handled by the staff of such a unit on a day care, night care, short-stay emergency or ambulatory basis were much less costly than those who required 24 hours in-patient care.

While this particular unit is still in its infancy and the budget which has been approved has yet to be tested, there seems to be very good evidence that, by changing the role of a facility and making it possible for the staff to treat patients in other than traditional ways, once again there can be real savings in medical care dollars.

Summary and Conclusions

There is no doubt that there is a great need for much investigation and research into this particular area of the delivery of medical care and its cost. There would appear to be some very sound arguments in favour of providing more care on a coordinated comprehensive and ambulatory basis.

If this is to come about, it will require education of the practicing physician, the medical student and the patient. It would appear that if there was more coordination between the health facilities in the community and the practising physicians, and if there were provision of more ambulatory and out-patient services of the kind that patients have come to expect, that, properly organized and properly administered, such services could result in a considerable saving of medical care dollars.

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Chapter 3

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TABLES

TABLE 1

Taxable Returns and Average Assessed Earnings
of Self-Employed Professionals
Canada, 1946, 1956 and 1966
(income in current dollars)

<u>Profession</u>	1946		1956		1966	
	<u>Taxable Returns</u>	<u>Income</u>	<u>Taxable Returns</u>	<u>Income</u>	<u>Taxable Returns</u>	<u>Income</u>
Physicians	6,343	7,466	11,868	13,053	15,361	24,993
Lawyers	3,792	6,528	6,142	12,616	8,145	21,046
Dentists	2,993	5,289	4,296	9,230	5,267	17,212
Architects	1,125	5,984	2,097	13,640	2,673	21,200
Accountants	---	---	3,071	9,940	5,079	13,946

Source: Taxation Division, Taxation Statistics, 1948, 1958 and 1968 editions, Ottawa, Department of National Revenue.

TABLE 2

Private Net Internal Rate of Return to Investment
in Higher Education, By Selected Levels and Careers,
Canada 1956 and 1966

Educational Level	Absolute Rates ¹ (%)		Incremental Rates ² (%)	
	<u>1956</u>	<u>1966</u>	<u>1956</u>	<u>1966</u>
1. <u>B.A.</u>				
a. Arts	24.5	19.8		
b. Science	26.2	20.8		
c. Engineering	26.3	22.0		
d. Agriculture	22.2	20.1		
2. <u>M.A.</u>				
a. Arts	21.0	16.5	12.1	11.4
b. Science	25.5	18.6	21.2	16.5
c. Engineering	25.8	19.6	20.8	11.2
d. Agriculture	21.9	17.5	19.8	14.8
3. <u>Ph.D.</u>				
a. Arts	15.0	12.2	8.9	7.8
b. Science	16.8	13.5	8.2	9.2
c. Engineering	16.7	13.9	6.8	9.3
d. Agriculture	15.4	12.6	8.1	8.0
4. <u>Professional Degree</u>				
Architecture	23.2	21.5	24.8	31.0
Dentistry	22.8	19.6	15.5	25.1
Law	23.1	22.6	27.5	36.8
Medicine:				
General Practice	16.5	17.8	11.0	18.6
Med. Specialty	8.5	11.6	1.5	4.5
Surg. Specialty	9.2	12.1	4.5	7.6

¹Absolute rates are the percentages that total private costs are of total earnings, associated with a given level of education.

²Incremental rates are the percentages that additional private costs are of additional earnings associated with a given level of education, over and above those associated with the next lower level.

TABLE 4

ESTIMATED PRIVATE COSTS PER STUDENT OF HIGHER EDUCATION IN CANADA BY CAREER AND DEGREE, 1956 AND 1966

	Tuition Fees & Books ¹		Loans ²		Earnings Foregone ³		Less Employment ⁴		Less Scholarships		Net Private Cost	
	\$ 1956	1966	\$ 1956	1966	\$ 1956	1966	\$ 1956	1966	\$ 1956	1966	\$ 1956	1966
1. B.A.												
a. Arts	1,264	2,540	92	1,890	4,820	10,365	2,445	3,453	300	1,272	3,431	10,070
b. Science	1,264	2,540	92	1,890	4,820	10,365	2,445	3,453	300	1,272	3,431	10,070
c. Engineering	1,584	2,820	212	1,890	4,820	10,365	2,445	3,453	648	1,272	3,523	10,330
d. Agriculture	1,584	2,820	212	1,890	4,820	10,365	2,445	3,453	648	1,272	3,523	10,330
2. M.A.												
a. Arts	1,624	3,325	118	2,885	9,050	15,875	3,180	4,830	366	1,952	7,246	15,303
b. Science	1,624	3,325	118	2,885	9,050	15,875	3,180	4,830	366	1,952	7,246	15,303
c. Engineering	2,044	3,605	240	2,885	9,050	15,875	3,180	4,830	1,014	1,952	7,140	15,583
d. Agriculture	2,044	3,605	240	2,885	9,050	15,875	3,180	4,830	1,014	1,952	7,140	15,583
3. Ph.D.												
a. Arts	2,344	4,895	170	4,275	18,890	29,040	4,925	8,120	1,032	3,315	15,447	26,775
b. Science	2,344	4,895	170	4,275	18,890	29,040	4,925	8,120	1,032	3,315	15,447	26,775
c. Engineering	2,964	5,175	292	4,275	18,890	29,040	4,925	8,120	1,746	3,315	15,475	27,053
d. Agriculture	2,964	5,175	292	4,275	18,890	29,040	4,925	8,120	1,746	3,315	15,475	27,053
4. Prof. Degrees												
a. Architecture	2,504	5,510	264	2,924	13,770	22,200	4,015	6,410	1,380	3,356	11,145	20,368
b. Dentistry	2,712	5,210	274	2,924	13,770	22,200	3,945	6,410	526	3,356	12,285	20,568
c. Law	1,850	3,385	244	2,585	13,770	22,200	5,420	8,250	290	1,952	10,154	17,968
Medicine:												
a. General Practice	2,972	5,650	274	2,930	18,570	29,535	6,345	9,890	526	2,686	14,950	25,540
b. Med. Specialty	2,972	5,650	274	2,930	45,625	103,735	19,885	30,350	526	2,686	28,460	79,280
c. Surg. Specialty	2,972	5,650	274	2,930	45,625	103,735	19,885	30,350	526	2,686	28,460	79,280

1 Taken from D.B.S., Canadian Institutions of Higher Education, 1958-59, Cat. No. 81-502, Ottawa, 1959 and Tuition and Living Accommodation Costs at Canadian Degree-Granting Universities and Colleges, 1968, Cat. No. 81-219, Ottawa, 1968.

2 Taken from a survey of accessibility to higher education in Canada conducted by R. Pike for the Association of Universities and Colleges of Canada (private communication).

3 For "Earnings Foregone" average income by age between the ages 18-22 were used; see, Dept. of National Revenue, Taxation Statistics, 1958 and 1968 editions, Table 10-A. Commencing with year 5(6,7) figures refer to average annual incomes of individuals with a first (second, Ph.D.) degree as reported in Dept. of Manpower and Immigration, Anticipated Requirements and Rates of Pay for University Graduates, 1960 and 1968 editions. In the case of dentistry and medicine the relevant earnings are taken from Dept. of National Health and Welfare, Earnings of Dentists in Canada, 1957-1966, and Earnings of Physicians in Canada, 1966.

4 Figures are one-fourth of annual foregone earnings, except for law (year 6) and medicine (years 7-11) which refer to average yearly stipends.

TABLE 5

EXPECTATION OF LIFE FOR PHYSICIANS COMPARED WITH
 THAT FOR WHITE PERSONS
 IN THE GENERAL POPULATION OF THE UNITED STATES, 1938-42
 MEN AND WOMEN SEPARATELY

Present Age	Men		Women	
	Physicians	United States White	Physicians	United States White
25	43.54	43.31	47.10	46.86
30	38.86	38.83	42.43	42.29
35	34.21	34.40	37.77	37.78
40	29.73	30.08	33.26	33.33
45	25.48	25.93	28.93	28.99
50	21.47	22.03	24.69	24.81
55	17.86	18.41	20.69	20.82
60	14.72	15.11	16.91	17.07
65	11.87	12.13	13.26	13.65
70	9.38	9.51	10.04	10.60
75	7.22	7.25	7.48	8.02
80	5.55	5.44	5.37	5.96

TABLE 6

RATIO OF DEATH RATES OF MALE PHYSICIANS TO THAT
OF WHITE MALES IN GENERAL POPULATION
PRINCIPAL CAUSES OF DEATH, AGES 25 YEARS AND OVER
UNITED STATES 1938-1942

Cause of Death	Ratio of Death Rates: Physicians to White Males
All causes of death	1.02
Leukemia and aleukemias	1.75
Biliary calculi and other diseases of the gall bladder	1.45
Intracranial lesions of vascular origin	1.20
Diseases of heart and coronary arteries	1.18
Arteriosclerosis	1.16
Cirrhosis of the liver	1.11
Pneumonia and influenza	1.09
Diabetes mellitus	1.08
Suicide	1.04
Automobile accidents	0.89
Cancer	0.81
Appendicitis	0.77
Hernia and intestinal obstruction	0.75
Nephritis	0.73
Ulcer of the stomach or duodenum	0.62
Accidents other than automobile	0.60
Diseases of the prostate	0.54
Ruber culosis	0.45
Syphilis	0.34

TABLE 7

RATIO OF DEATHS FROM DISEASES
OF THE CORONARY ARTERIES AND ANGINA PECTORIS
MALE PHYSICIANS
TO MALES IN THE GENERAL POPULATION
UNITED STATES 1938-1942

Age Group	Ratio of Deaths: Physicians to White Males
25 and over	1.81
25	0.81
35	1.51
45	1.74
55	1.95
65	1.90
75	1.62

TABLE 8

CHANCE OF DYING FROM CORONARY HEART DISEASE⁽³⁾

THE NUMBER OF MALE MEDICAL PRACTITIONERS

WHO WOULD DIE OF CORONARY HEART DISEASE

BEFORE REACHING CERTAIN AGES

Age X (years)	Of 1000 men aged X, the number indicated below would die of coronary heart disease before age ...					
	40	45	50	55	60	65
35	3	6	12	23	42	75
40		3	9	20	39	73
45			6	17	37	71
50				11	31	66
55					20	56
60						38

TABLE 9

MORTALITY ACCORDING TO CAUSE OF DEATH
 AMONG ALL SPECIALISTS, AND GENERAL PRACTITIONERS
 AT AGES 35-74
 RATIO OF ACTUAL DEATHS TO THE DEATHS EXPECTED
 ON THE BASIS OF AGE-SPECIFIC DEATH RATES
 FOR ALL MALE PHYSICIANS
 UNITED STATES OF AMERICA, 1938-1942

Cause of Death	Mortality Ratios	
	All Specialists	General Practitioners
All causes	0.78*	1.10*
Tuberculosis	0.56*	1.18*
Syphilis	0.61	1.12
Cancer, all sites	0.96	1.09*
of digestive organs	0.96	1.07
of respiratory organs	0.97	1.00
of genito-urinary organs	0.90	1.06
Leukemia	1.09	1.07
Diabetes mellitus	0.36*	1.20*
Cardiovascular-renal	0.81*	1.08*
Diseases of coronary arteries and angina pectoris	0.97	1.02
Pneumonia and influenza	0.65*	1.13*
Ulcer of the stomach or duodenum	0.61*	1.12*
Appendicitis	0.78	1.07
Hernia & intestinal obstruction	0.65	1.16
Cirrhosis of the liver	0.64*	1.11
Biliary calculi & other diseases of the gall bladder	0.79	1.12
Diseases of the prostate gland	0.91	1.05
Suicide	0.76*	1.09
Automobile accidents	0.85	1.07
Other accidents	0.54*	1.16*
All other causes	0.68*	1.14*

TABLE 10

STANDARDIZED MORTALITY RATIOS OF MEN
 AGED 20-64
 UNITED KINGDOM
 1950 (4)

	Social Class				
	I	II	III	IV	V
All Causes	97	86	102	94	118
Leukemia	153	101	107	81	88
Diseases of liver & gall bladder	128	139	93	63	111
Vascular lesions affecting central nervous system	123	102	104	81	100
Arteriosclerotic (coronary) heart disease	150	110	104	79	89
Hypertension with heart disease	114	91	105	87	106
Hypertension without heart disease	164	103	100	83	98
Diabetes mellitus	167	97	97	91	108
Suicide	134	110	89	99	119
Pneumonia & influenza	43	63	97	106	157
Accidental death					
Road motor vehicle accident	97	84	102	102	110
Accidents in the home	82	88	99	92	124
Malignant neoplasms, all sites	96	84	105	94	110
Appendicitis	123	110	101	79	102
Hernia & intestinal obstruction	(14)	92	100	132	100
Nephritis	128	93	101	97	95
Ulcer of stomach	56	81	97	99	144
Ulcer of duodenum	105	78	106	82	126
Hyperplasia of prostate	92	109	101	97	95

TABLE 11

Aggregate Expenditures on Personal Health Care Services
and Annual Rates of Change, by Type of Expenditure,
Canada, Selected Years

Year	Physicians' Services (\$000,000's) (%)	Hospital Services (\$000,000's) (%)	Other* (\$000,000's) (%)	Total (\$000,000's) (%)
1957	271.8	587.0	241.2	1,100.0
1966	605.2	1,650.6	559.7	2,815.5
1970	1,065.0	2,762.0	859.5	4,686.5
1980	2,480.0	9,990.0	1,858.0	13,828.0

*Includes dentists' services, prescribed drugs, and other services.

TABLE 12

EXPENDITURES ON PERSONAL HEALTH CARE SERVICES
AS PERCENTAGE OF GROSS NATIONAL PRODUCT,
PERSONAL INCOME, AND PERSONAL DISPOSABLE INCOME,
BY TYPE OF EXPENDITURE,
CANADA,
SELECTED YEARS

<u>Year</u>	<u>Physicians' Services</u>	<u>Hospital Services</u>	<u>Other</u>	<u>Total</u>
(a)	Gross National Product			
1957	.85	1.84	.75	3.45
1966	1.04	2.84	.96	4.84
1970	1.38	3.58	1.12	6.08
1980	1.63	6.25	1.22	9.10
(b)	Personal Income			
1957	1.17	2.53	1.04	4.74
1966	1.41	3.83	1.30	6.54
1970	1.79	4.64	1.44	7.87
1980	2.04	7.81	1.53	11.38
(c)	Personal Disposable Income			
1957	1.28	2.76	1.14	5.18
1966	1.57	4.28	1.45	7.30
1970	2.06	5.35	1.66	9.07
1980	2.40	9.19	1.80	13.39

TABLE 13

Expenditures on Selected Items
of Personal Health Care
As Percentages of Gross National Products
at Market Prices
Selected Countries
1957 and 1966

Year	Canada	United States	New Zealand	United Kingdom	Norway
	(%)	(%)	(%)	(%)	(%)
1957	3.23	3.34	3.53	2.88	2.81
1966	4.55	4.15	3.77*	3.38	2.95*

*These two figures relate to 1965, the data for 1966 are not available

TABLE 14

Per Capita Costs and Annual Rates of Increase of Physicians' Services
and of Major Economic Indicators, Canada, Selected Years

Year	Physicians' Services		Gross National Product		Personal Income		Personal Disposable Income	
	(\$)	(%)	(\$)	(%)	(\$)	(%)	(\$)	(%)
1957	16.36		1,927		1,399		1,278	
		7.1		4.7		4.9		4.7
1966	30.24		2,903		2,152		1,928	
		13.2		5.5		6.6		5.8
1970	49.68		3,598		2,777		2,410	
		7.0		5.2		5.6		5.4
1980	97.72		5,987		4,789		4,072	

TABLE 15

Average Gross Professional Earnings
of
Active Fee Practice Physicians
and
Annual Rates of Change,
Canada,
Selected Years

Year	Average Gross Earnings	
	(\$)	(%)
1957	20,800	
		6.0
1966	35,200	
		11.6
1970	54,700	
		5.4
1980	92,500	

TABLE 16

AGGREGATE AND PER CAPITA PERSONAL INCOME AND EXPENDITURES ON
PHYSICIANS' SERVICES AND
AVERAGE GROSS PROFESSIONAL EARNINGS OF
ACTIVE FEE PRACTICE PHYSICIANS, ANNUAL RATES OF CHANGE,
CONSTANT DOLLARS (1957 EQUALS 100.0)
CANADA, SELECTED YEARS

<u>Year</u>	<u>Aggregate</u>		<u>Per Capita</u>	
	(\$000,000's)	(%)	(\$)	(%)
(a) Personal Income				
1957	23,230		1,399	
1966	36,480	5.2	1,823	2.8
1970	43,130	4.3	2,012	2.6
1980	66,780	4.5	2,632	2.7
(b) Costs of Physicians' Services				
1957	271.8		16.36	
1966	512.7	7.3	25.62	5.1
1970	771.4	10.8	35.98	8.9
1980	1,363.0	5.9	53.72	4.1
(c) Average Gross Professional Earnings				
<u>Year</u>	<u>Average Earnings</u>			
	(\$)	(%)		
1957	20,800			
1966	29,800	4.1		
1970	39,600	7.4		
1980	50,900	2.6		

TABLE 17

PER CAPITA EXPENDITURES ON PHYSICIANS' SERVICES AND ANNUAL RATES OF CHANGE, AND TOTAL EXPENDITURES ON PHYSICIANS' SERVICES AS PERCENTAGE OF GROSS NATIONAL PRODUCT,
PERSONAL INCOME AND PERSONAL DISPOSABLE INCOME, CANADA AND UNITED STATES COMPARED, 1957 AND 1966

(a) Per Capita Costs and Annual Rates of Change:

Year	Per Capita Costs (\$)		Annual Rate of Change (%)	
	Canada	United States	Canada	United States
1957	16.36	25.39	7.05	7.25
1966	30.24	47.69		

(b) Aggregate Costs as Percentage of Major Economic Indicators and Percentage Change:

Year	Gross National Product		Personal Income		Personal Disposable Income	
	Canada	United States	Canada	United States	Canada	United States
1957	.85	.97	1.17	1.21	1.28	1.44
1966	1.04	1.25	1.41	1.56	1.57	1.89

Percentage Increases in Percentages 1957 - 1966

22.4	28.9	20.5	28.9	22.7	31.3
------	------	------	------	------	------

TABLE 18

Percentage Distribution of
Total Expenditures of Urban Families,
11 Cities
Canada, 1964

	Percentage Distribution	Average Dollar Amounts
	%	\$
Food	20.7	1,323
Shelter	16.8	1,077
Household operation	4.0	258
Furnishings	4.3	276
Clothing	8.6	550
Transport	12.1	776
Car	10.1	646
Other	2.0	130
All Medical care	3.9	251
Personal care	2.3	145
Recreation	3.2	206
Reading	0.7	42
Education	0.8	54
Tobacco, alcohol	4.0	255
Other	1.3	82
All current consumption	82.8	5,296
Gifts, contributions	3.1	199
Personal taxes	9.4	599
Security	4.7	301
TOTAL Expenditures	100.0	6,395

SOURCE: D.B.S. urban family survey, 1964

TABLE 19

Average Gross and Net Professional Earnings and
Expenses of Practice of Active Fee Practice Physicians, and
Rates of Increase, Canada, Selected Years

	1957	1966	1967	Average Annual Rate of Increase 1957-1966	Percentage Increase 1967 Over 1966
	\$	\$	\$	(%)	(%)
Gross Earnings	20,808	35,223	38,790	6.0	10.1
Expenses	7,952	11,961	12,609	4.7	5.4
Net Earnings	12,852	23,262	26,181	6.8	12.5

TABLE 20

Average Gross* and Net Professional Earnings
and
Expenses of Practice of Active Fee Practice Physicians
and
Annual Rates of Increase,
Canada
Selected Years

Year	Gross Earnings		Expenses		Net Earnings	
	(\$)	(%)	(\$)	(%)	(\$)	(%)
1966	35,223		11,961		23,262	
		11.6		6.0		14.2
1970	54,700		15,100		39,600	
		5.4		5.0		5.5
1980	92,500		24,600		67,900	

*See also Table 15.

TABLE 21

Average Net Professional Earnings
of
Active Fee Practice Physicians,
and
Annual Rate of Increase,
by Province,
1957 and 1967

Province	1957	1967*	Average Annual Rate of Increase
	(\$)	(\$)	(%)
Newfoundland	16,084	25,578	4.7
Prince Edward Island	9,787	20,716	7.8
Nova Scotia	10,026	21,690	8.0
New Brunswick	10,023	24,662	9.4
Quebec	10,669	23,133	8.0
Ontario	13,914	29,444	7.8
Manitoba	13,515	22,962	5.5
Saskatchewan	13,900	25,110	6.1
Alberta	13,422	28,334	7.8
British Columbia	14,926	25,169	5.4

*Preliminary

TABLE 22

The Number of Active Civilian Fee Practice Physicians
 Per 1,000 Persons,
 and
 The Annual Rate of Increase,
 By Province,
 1957 and 1967

Province	Rate per 1,000 Persons		Annual Rate of Increase
	1957	1967	
			%
Newfoundland	.37	.52	3.5
Prince Edward Island	.67	.69	.3
Nova Scotia	.67	.79	1.7
New Brunswick	.58	.62	.7
Quebec	.74	.82	1.0
Ontario	.88	.94	.7
Manitoba	.78	.91	1.6
Saskatchewan	.71	.78	1.0
Alberta	.73	.80	1.0
British Columbia	.94	1.05	1.1

TABLE 23

Average Income of Individuals,
 Selected Occupations,
 Males, Canada,
 Year Ended
 May 31, 1961

Occupation	Number of Persons	Average Income
		\$
Professional Engineers, S.E.*	1,515	12,930
Professors and College Principals	6,130	9,247
Physicians and Surgeons, S.E.	12,005	18,812
Dentists, S.E.	4,626	13,848
Optometrists, S.E.	969	10,410
Judges and Magistrates	811	13,009
Lawyers and Notaries, S.E.	7,963	13,941
Architects, S.E.	932	12,997
Accountants and Auditors, S.E.	4,178	11,469
Owners and Managers, Finance Insurance, Real Estate, S.E.	9,764	11,695

*S.E. - self-employed only

TABLE 24

Average Incomes and Average Annual Rates of Increase in Incomes,
Selected Professions, 1957 and 1966

Profession	Average Income		Average Annual Rate of Increase
	1957	1966	
	(\$)	(\$)	(%)
Physicians and Surgeons	13,978	24,993	6.7
Engineers and Architects	14,581	21,200	4.2
Lawyers and Notaries	13,244	21,045	5.3
Dentists	10,234	17,212	5.9
Accountants	10,879	13,946	2.8
Other Professionals	4,731	6,870	4.2
Proprietors, Finance	8,846	10,907	2.4

TABLE 25:

INCOME FROM EMPLOYMENT AND PERCENTAGE ANALYSIS, BY AGE GROUP, NON-FARM MALE POPULATION 25-64 YEARS OF AGE,
IN THE CURRENT LABOUR FORCE; UNIVERSITY GRADUATES IN SELECTED OCCUPATIONS, CANADA, 1961

	Owners and Managers				Professional Engineers	Professors and College Principals	Physicians and Surgeons	Dentists	Lawyers and Notaries	Accountants and Auditors
	Manufacturing Industries	Finance, Insurance, Real Estate	Public Administration							
(1) Average Employment Income, by Age-Group (\$)										
25 - 34	8,895	9,785	6,514		6,858	6,692	9,411	14,025	7,879	6,733
35 - 44	12,694	11,654	8,798		9,040	9,663	18,348	14,936	13,276	8,979
45 - 54	15,434	13,649	10,052		9,976	11,244	19,728	14,464	13,711	10,409
55 - 64	16,422	15,766	10,164		10,648	11,255	15,543	10,820	16,322	11,992
All Ages	13,303	12,479	9,068		8,354	9,223	15,752	13,705	11,612	8,568
(2) Per Cent of Total in Each Age-Group Earning \$10,000 plus (%)										
25 - 34	29.8	37.0	6.7		6.6	8.9	38.3	63.6	25.1	12.9
35 - 44	58.6	45.7	27.8		27.9	41.3	76.7	81.4	63.8	31.0
45 - 54	64.6	58.8	44.5		40.1	62.8	81.3	72.4	58.2	37.7
55 - 64	70.2	57.7	47.4		41.2	60.4	70.8	41.0	61.4	39.4
(3) Per Cent of Total Number in Each Age-Group (%)										
25 - 34	17.5	21.8	16.5		42.0	31.9	28.7	24.8	38.4	40.4
35 - 44	40.5	33.8	33.5		37.9	36.2	36.7	35.0	32.6	33.6
45 - 54	29.7	28.0	32.7		13.8	22.3	22.4	17.8	18.2	18.3
55 - 64	12.3	16.4	17.3		6.3	9.6	12.2	22.4	10.8	7.7
All Ages	100.0	100.0	100.0		100.0	100.0	100.0	100.0	100.0	100.0
(4) Total Payments*to Occupation by Age-Group (%)										
25 - 34	11.7	17.1	11.9		34.5	23.1	17.1	25.3	26.1	31.7
35 - 44	38.6	31.6	32.5		41.0	37.9	42.8	38.2	37.2	35.2
45 - 54	34.5	30.6	34.5		16.5	27.2	28.1	18.8	21.4	22.2
55 - 64	15.2	20.7	19.4		8.0	11.8	12.0	17.7	15.3	10.9
All Ages	100.0	100.0	100.0		100.0	100.0	100.0	100.0	100.0	100.0

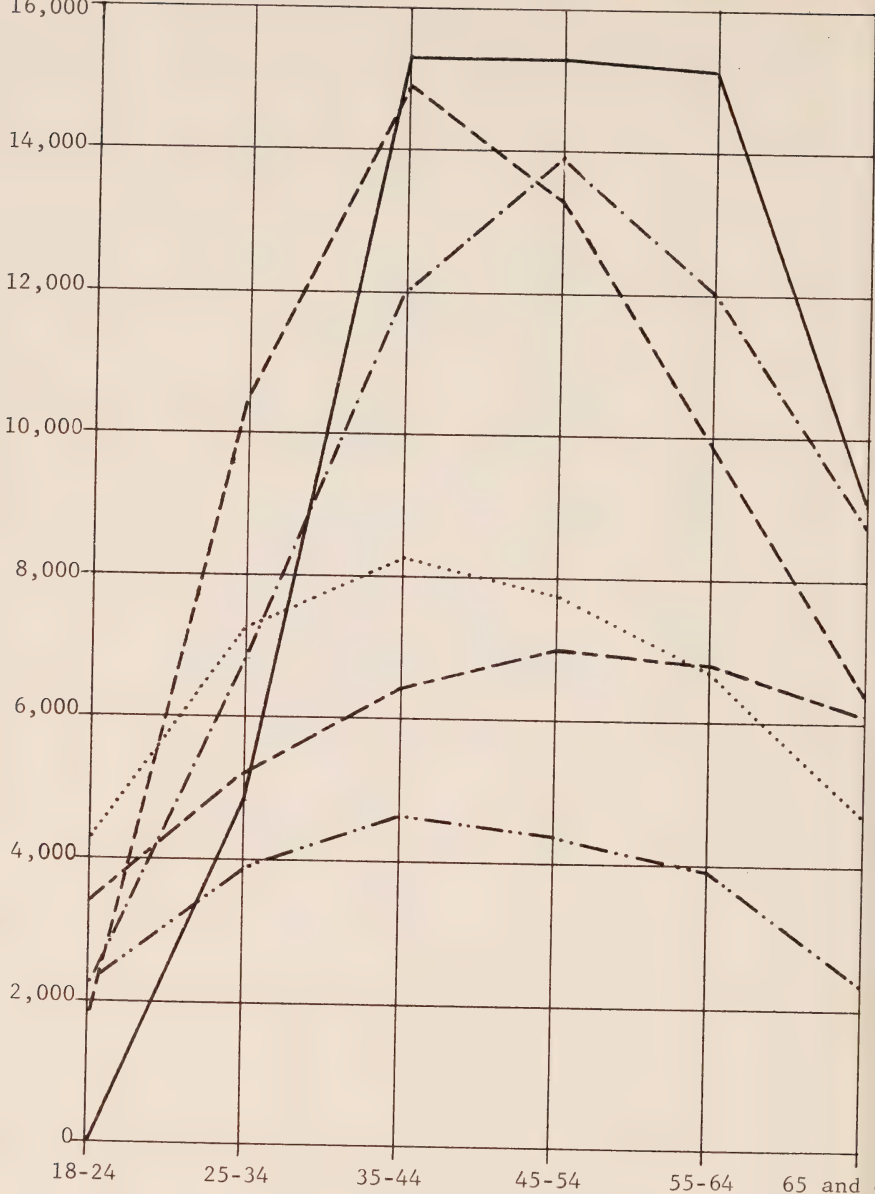
* Total number in each age-group times average employment income for that age-group. SOURCE: Census of Canada, 1961, Bulletin 4.1-2, Table B6.

TABLE 26

MEDIAN EARNINGS OF MALE MEMBERS OF SELECTED
PROFESSIONS, BY AGE, UNITED STATES, 1959

Median
Earnings

\$ 16,000



Physicians
Dentists
Pharmacists
Clergymen

Lawyers
and Judges
Teachers,
Secondary Schools

TABLE 27

Indices of Average Net Professional Incomes
of
Physicians, By Type of Specialty,
Canada, 1966
(Average Net Incomes of
General Practitioners equal 100.0)

Type of Specialty	Index
Medical Specialties (No. 1-5 in Table 28)	114.2
Surgical Specialties (No. 6-15)	147.3
Radiology and Pathology	159.5
All Specialties	134.6

TABLE 28

INDICES OF AVERAGE NET PROFESSIONAL INCOMES OF PHYSICIANS, BY SPECIALTY, BY PROVINCE AND FOR ALL CANADA, 1966
(AVERAGE NET INCOMES OF GENERAL PRACTITIONERS equals 100.0)*

(Based on preliminary data only. Some of these indices may be subject to change in the light of further study.)

	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada Index	Rank
1) Paediatrics	130.8		92.9	94.3	106.7	113.8	107.2	134.3	108.1	99.1	107.7	17
2) Internal Medicine	80.5	85.5	98.0	115.2	125.1	116.8	100.8	102.8	133.0	99.9	113.0	15
3) Psychiatry	89.5				125.6	106.1	121.4	73.3	108.2	95.7	108.2	16
4) Dermatology					123.6	141.1			187.7	123.8	135.8	10
5) Anaesthesia			104.5	142.1	149.8	107.6	115.7	150.9	112.0	118.4	119.9	14
6) General Surgery	148.8	96.1	155.9	130.0	159.4	144.7	122.9	120.6	117.2	120.4	138.6	9
7) Cardio. and Thoracic					166.0	138.6			182.2		150.5	8
8) Orthopaedic Surgery		127.4		221.6	200.5	137.0	180.4	168.3	151.4		185.4	1
9) Plastic Surgery				158.5	167.5		157.9	165.0	123.7		156.7	5
10) Neuro-Surgery				180.5	193.6			152.9	176.4		183.9	2
11) Obstetrics and Gynaecology	78.0	138.0	172.7	158.8	127.8	110.4	138.1	128.5	119.0		133.6	11
12) Urology		133.2	122.8	165.7	154.3	133.1	180.7	132.2	169.9		155.1	7
13) Ophthalmology		119.6		147.3	164.1	151.7	174.0	157.5	144.6		155.6	6
14) Otology				173.1	178.8	177.0	308.3	163.2	142.3		172.0	3
15) Ophthalmology & Otology	216.1	127.5	141.2	140.3	120.9		132.2	145.1			130.6	12
16) Radiology				165.9	158.9	229.8	186.1	263.9	149.2		166.7	4
17) Pathology				136.2	134.6			196.0			129.6	13
All Specialties	132.3	94.4	129.8	131.7	147.3	136.1	129.5	143.2	140.0	122.8	134.6	

* The average net professional incomes of general practitioners in each province used for provincial data. The Canada-wide average of general practitioners' incomes used for the figures in the "Canada" column.

INDEXES⁽¹⁾ OF PROVINCIAL MEDICAL ASSOCIATION FEE SCHEDULES IN EFFECT SEPTEMBER 1, 1968, OVER PREVIOUS PROVINCIAL SCHEDULE⁽²⁾, BY TYPE OF SERVICE

INTRAPROVINCIAL COMPARISONS

GENERAL PRACTITIONERS AND SPECIALISTS COMBINED

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
All Services	116.7	114.6	122.7	125.4	N/A	111.3	133.1	123.1	110.1	109.9
Office visits	135.1	108.1	131.5	142.5	N/A	129.0	159.9	125.1	105.3	116.2
Consultations	120.6	119.9	118.0	100.0	N/A	102.1	142.9	137.2	138.4	100.5
Home visits	130.3	138.5	122.2	130.9	N/A	133.2	129.5	168.0	110.9	113.2
Hospital visits	100.0	100.0	147.4	100.0	N/A	100.0	123.3	129.5	147.4	104.9
Obstetrics	116.2	125.7	118.3	116.2	N/A	102.8	107.1	154.1	100.0	120.0
Surgery	100.0	113.9	110.6	114.8	N/A	100.0	120.0	103.6	106.3	105.0
Anaesthesia	100.0	109.4	133.3	166.7	N/A	100.0	127.3	119.3	122.9	107.0
Surgical Assistance	100.0	137.2	115.7	115.0	N/A	100.8	200.4	114.1	123.0	120.7
Radiology	100.0	-	100.0	100.0	N/A	100.0	106.3	109.2	100.0	112.5
Laboratory Procedures	100.0	121.9	-	147.4	N/A	100.0	110.0	100.0	100.0	100.0
Other Diagnostic and Therapeutic Procedures	100.0	108.3	100.0	102.9	N/A	100.0	110.9	104.2	101.6	102.5

(1) Based on a sampling of approximately 80 fee schedule items per fee schedule.

(2) Indexed years and base years are as follows: Newfoundland: 1967/1962; Prince Edward Island: 1968/1966; Nova Scotia: 1967/1963; New Brunswick: 1966/1963; Ontario: 1967/1965; Manitoba: 1967/1961; Saskatchewan: 1968/1959; Alberta: 1967/1966; British Columbia: 1967/1964. Base year schedules include all amendments up to issuance of the most recent schedule.

SOURCE: Health Research Division, March 18, 1969.

TABLE 30

INDEXES ⁽¹⁾ OF PROVINCIAL MEDICAL ASSOCIATION FEE SCHEDULES IN EFFECT SEPTEMBER 1, 1968, OVER PREVIOUS PROVINCIAL SCHEDULE ⁽²⁾, BY TYPE OF SERVICE
GENERAL PRACTITIONERS

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
All Services	121.4	115.0	131.0	129.6	N/A	117.2	138.1	126.3	115.3	109.2
Office visits	139.9	109.1	135.3	148.4	N/A	132.3	163.9	120.1	105.8	113.7
Consultations	100.0	100.0	100.0	100.0	N/A	151.9	142.9	150.0	130.0	120.0
Home visits	137.9	138.5	119.3	133.5	N/A	136.9	129.5	171.3	110.8	108.7
Hospital visits	100.0	100.0	166.7	100.0	N/A	100.0	127.0	133.3	166.7	100.0
Obstetrics	117.6	129.4	117.6	113.3	N/A	100.0	107.1	155.0	100.0	120.0
Surgery	100.0	120.5	108.0	114.8	N/A	100.0	107.5	103.1	106.3	103.2
Anaesthesia	100.0	107.1	133.3	N/A	N/A	100.0	127.3	130.6	122.9	107.0
Surgical Assistance	100.0	137.2	115.7	115.0	N/A	100.8	200.4	114.1	123.0	120.7
Radiology	-	-	-	-	N/A	-	-	-	-	-
Laboratory Procedures	100.0	121.9	-	147.4	N/A	100.0	109.8	100.0	100.0	100.0
Other Diagnostic and Therapeutic Procedures	100.0	110.8	100.0	102.9	N/A	100.0	106.8	105.4	101.6	105.0

⁽¹⁾ Based on a sampling of approximately 40 fee schedule items per fee schedule.

⁽²⁾ Indexed years and base years are as follows: Newfoundland; 1967/1962: Prince Edward Island; 1968/1966: Nova Scotia; 1967/1963: New Brunswick; 1966/1963: Ontario; 1967/1965: Manitoba; 1967/1961: Saskatchewan; 1968/1959: Alberta; 1967/1966: British Columbia; 1967/1964: Base year schedules include all amendments up to issuance of the most recent schedule.

SOURCE: Health Research Division, March 18, 1969.

INDEXES ⁽¹⁾ OF PROVINCIAL MEDICAL ASSOCIATION FEE SCHEDULES IN EFFECT SEPTEMBER 1, 1968, OVER PREVIOUS PROVINCIAL SCHEDULE ⁽²⁾, BY TYPE OF SERVICE SPECIALISTS

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec ⁽³⁾	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
All Services	104.8	108.6	112.0	110.5	N/A	102.7	121.4	117.1	108.8	110.6
Office visits	118.3	103.5	116.1	119.5	N/A	118.1	144.5	148.1	103.3	125.3
Consultations	121.3	120.6	118.9	100.0	N/A	100.7	142.9	136.8	133.7	100.0
Home visits	93.5	138.6	150.7	100.0	N/A	101.5	129.6	126.9	112.2	125.3
Hospital visits	100.0	100.0	100.0	100.0	N/A	100.0	114.3	120.0	100.0	125.0
Obstetrics	112.0	113.6	120.0	125.0	N/A	112.0	107.1	151.0	100.0	120.0
Surgery	100.0	106.1	110.6	114.8	N/A	100.0	109.9	104.1	106.3	107.4
Anaesthesia	100.0	111.1	133.3	N/A	N/A	100.0	127.3	111.6	122.9	107.0
Surgical Assistance	-	-	-	-	N/A	-	-	-	-	-
Radiology	100.0	-	100.0	100.0	N/A	100.0	121.1	109.2	100.0	112.5
Laboratory Procedures	100.0	121.9	-	147.4	N/A	100.0	110.8	100.0	100.0	100.0
Other Diagnostic and Therapeutic Procedures	100.0	105.3	100.0	102.9	N/A	100.0	116.7	102.7	101.6	100.0

⁽¹⁾ Based on a sampling of approximately 40 fee schedule items per fee schedule.

⁽²⁾ Indexed years and base years are as follows: Newfoundland; 1967/1962: Prince Edward Island; 1968/1966: Nova Scotia; 1967/1963: New Brunswick; 1966/1963: Ontario; 1967/1965: Manitoba; 1967/1961: Saskatchewan; 1968/1959: Alberta; 1967/1966: British Columbia; 1967/1964: Base year schedules include all amendments up to issuance of the most recent schedule.

⁽³⁾ Comparisons with previous schedule not readily available.

SOURCE: Health Research Division, March 18, 1969.

TABLE 32

ESTIMATED DISTRIBUTION OF ACTIVE FEE PRACTICE PHYSICIANS AND ANNUAL RATES OF INCREASE,
BY SPECIALTY, CANADA, 1957 and 1968

Specialty	1957		1968		Average Annual Rate of Increase 1957 - 1968
	Number	Per Cent of Total	Number	Per Cent of Total	
Paediatrics	306	2.34	638	3.48	% 6.9
Internal Medicine, Physical Medicine, Tuberculosis	797	6.10	1,570	8.57	6.4
Psychiatry & Neurology	223	1.71	612	3.34	9.6
Dermatology & Syphilology	82	.63	139	.76	4.9
Anaesthesia	384	2.94	831	4.54	7.3
All Medical Specialties	1,792	13.72	3,790	20.69	7.0
General Surgery	1,090	8.34	1,776	9.70	4.5
Orthopaedic Surgery	136	1.04	330	1.80	8.4
Obstetrics & Gynaecology	410	3.14	763	4.17	5.8
Urology	124	.95	234	1.28	5.9
Ophthalmology & Otolaryngology	447	3.42	764	4.17	5.0
All Surgical Specialties	2,207	16.89	3,867	21.12	5.2
Radiology	145	1.11	352	1.92	8.4
Pathology & Bacteriology	79	.61	204	1.12	9.0
All Diagnostic Specialties	224	1.72	556	3.04	8.6
All Certificated Specialists	4,223	32.33	8,213	44.85	6.2
General Practitioners	8,840	67.67	10,101	55.15	1.2
All Physicians	13,063	100.00	18,314	100.00	3.1

TABLE 33

Estimated Life-time Earnings of Physicians,

By Type of Specialty,

Canada,

Based upon 1967 Average Net Earnings

From All Sources By Age Group

Type of Specialty	Total Life-Time Earnings
	(\$)
General Practitioners	950,000
Medical Specialists	986,000
Surgical Specialists	1,086,000
Radiologists and Pathologists	1,373,000

TABLE 34

INTERPROVINCIAL COMPARISONS
INDEXES⁽¹⁾ OF PROVINCIAL MEDICAL ASSOCIATION FEE SCHEDULES IN EFFECT SEPTEMBER 1, 1968, BY TYPE OF SERVICE (ONTARIO equals 100.0)
GENERAL PRACTITIONERS AND SPECIALISTS COMBINED

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
All Services	97.8	99.8	109.9	96.2	N/A	100.0	118.6	103.9	99.7	109.6
Office visits	90.9	94.8	96.2	83.4	N/A	100.0	105.0	86.0	87.6	100.9
Consultations	98.6	83.1	110.6	85.0	N/A	100.0	106.0	110.3	84.3	95.3
Home visits	97.8	93.2	100.0	95.2	N/A	100.0	156.6	119.3	96.8	111.2
Hospital visits	113.9	103.8	131.0	96.9	N/A	100.0	125.0	119.2	101.5	140.9
Obstetrics	100.0	104.8	101.8	88.9	N/A	100.0	127.9	120.5	92.8	122.2
Surgery	100.0	116.2	119.6	114.6	N/A	100.0	133.0	116.5	111.8	107.3
Anaesthesia	100.0	100.3	105.7	90.6	N/A	100.0	129.8	90.8	99.2	92.5
Surgical Assistance	100.0	112.0	146.6	138.5	N/A	100.0	187.8	106.4	97.2	151.0
Radiology	100.0	84.2	126.1	107.0	N/A	100.0	110.2	100.8	104.4	103.3
Laboratory Procedures	100.0	-	-	-	N/A	100.0	92.1	84.5	74.0	102.1
Other Diagnostic and Therapeutic Procedures	100.0	107.5	117.1	107.5	N/A	100.0	99.7	107.4	93.5	78.0

⁽¹⁾ Based on a sampling of approximately 350 fee schedule items per fee schedule.

SOURCE: Health Research Division, March 18, 1969.

INTERPROVINCIAL COMPARISONS
INDEXES ⁽¹⁾ OF PROVINCIAL MEDICAL ASSOCIATION FEE SCHEDULES IN EFFECT SEPTEMBER 1, 1968, BY TYPE OF SERVICE (ONTARIO equals 100.0)
GENERAL PRACTITIONERS

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
All Services	96.6	98.7	110.2	98.3	N/A	100.0	127.3	104.7	99.4	110.9
Office visits	89.0	82.5	93.5	82.5	N/A	100.0	103.7	84.9	80.4	93.8
Consultations	66.7	66.7	100.0	66.7	N/A	100.0	133.3	100.0	86.7	80.0
Home visits	97.7	95.4	100.1	95.4	N/A	100.0	157.2	122.0	99.0	111.8
Hospital visits	111.0	103.7	136.8	98.7	N/A	100.0	131.1	128.0	138.5	148.0
Obstetrics	100.0	110.0	100.0	88.7	N/A	100.0	150.4	125.0	100.0	120.0
Surgery	100.0	131.3	132.0	137.2	N/A	100.0	157.7	124.4	121.0	128.5
Anaesthesia	100.0	93.5	114.9	106.1	N/A	100.0	141.0	87.7	107.9	100.5
Surgical Assistance	100.0	112.0	146.6	138.5	N/A	100.0	187.8	102.1	97.2	114.6
Radiology	-	-	-	-	N/A	-	-	-	-	-
Laboratory Procedures	100.0						93.5	78.8	64.6	107.3
Other Diagnostic and Therapeutic Procedures	100.0	118.9	131.9	118.9	N/A	100.0	109.5	112.4	102.8	70.7

⁽¹⁾Based on a sampling of approximately 100 fee schedule items per fee schedule.

SOURCE: Health Research Division, March 18, 1969.

TABLE 36

INTERPROVINCIAL COMPARISONS
 INDEXES⁽¹⁾ OF PROVINCIAL MEDICAL ASSOCIATION FEE SCHEDULES IN EFFECT SEPTEMBER 1, 1968, BY TYPE OF SERVICE (ONTARIO equals 100.0)
 SPECIALISTS

	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia
All Services	100.0	104.9	109.5	95.6	108.1	100.0	112.9	103.4	99.9	108.9
Office visits	100.0	179.1	114.8	89.9	118.1	100.0	111.1	93.2	157.3	149.6
Consultations	100.0	84.5	111.5	86.6	93.3	100.0	105.0	111.2	84.2	96.6
Home visits	100.0	56.6	97.0	91.6	99.2	100.0	144.3	75.2	59.7	96.5
Hospital visits	100.0	96.9	107.2	89.5	94.6	100.0	106.8	110.8	97.0	111.7
Obstetrics	100.0	89.3	107.1	89.8	106.3	100.0	107.9	107.1	71.4	128.6
Surgery	100.0	99.8	105.9	103.4	102.1	100.0	120.8	107.8	101.8	106.2
Anaesthesia	100.0	106.1	97.8	72.3	122.4	100.0	120.1	93.4	91.9	85.6
Surgical Assistance	-	112.0	146.6	-	-	100.0	187.8	123.4	97.2	294.7
Radiology	100.0	84.2	126.1	107.0	127.0	100.0	110.2	100.8	104.4	103.3
Laboratory Procedures	100.0	-	-	-	-	100.0	91.3	89.7	79.8	95.3
Other Diagnostic and Therapeutic Procedures	100.0	95.2	101.4	95.2	108.5	100.0	89.1	102.0	85.5	85.7

(1) Based on a sampling of approximately 250 fee schedule items per fee schedule.

SOURCE: Health Research Division, March 18, 1969.

TABLE 37

NUMBER OF FEE SCHEDULE ITEMS INDEXED, AND VALUE OF INDEXED
ITEMS AS PER CENT OF TOTAL PAYMENTS,
BY TYPE OF SERVICE. INTERPROVINCIAL COMPARISONS, GENERAL
PRACTITIONER AND SPECIALISTS COMBINED

Type of Service	Number of Items Indexed(1)	Value of Items Indexed As Per Cent of Payments(2)
		%
All Services	355	77.3
Visits	140	95.0
Consultations	40	95.0
Obstetrics	2	88.3
Surgery	72	54.1
Anaesthesia	36	38.1
Surgical Assistance	20	18.8
Radiology	6	60.0
Laboratory Procedures	29	82.5
Other Diagnostic and Therapeutic Procedures	10	48.0

- (1) In this count fee-schedule items applicable to different specialties are counted separately. For example, the items relating to "major consultations" by general practitioners, internists, and general surgeons respectively are counted as 3 different items. The 72 "surgery" items refer to 36 different surgical procedures, performed by either general practitioners or specialists. The items included under anaesthesia and surgical assistance are based upon the list of surgical items, reduced by items for which we had no information on "average time", and/or items which would not normally require anaesthesia or surgical assistance services. The number of different items is a maximum per fee schedule, and may be slightly smaller in the case of some fee schedules.
- (2) The percentages are based upon the payments made by the Saskatchewan Medical Care Insurance Commission, and consequently they may not necessarily be the same in other provinces.

TABLE 38

SASKATCHEWAN MEDICAL CARE INSURANCE PLAN
BENEFICIARIES BY SIZE OF PAYMENT

Size of Payment	% Total Beneficiaries	Cum. % Total Beneficiaries	% Total Costs	Cum. % Total Costs
\$ 0.00	29.42	29.42	0	0
0.01 - 10.00	24.98	54.40	5.1	5.1
10.01 - 25.00	20.10	74.50	11.9	17.0
25.01 - 50.00	10.91	85.41	14.0	31.0
50.01 - 100.00	8.01	93.42	20.5	51.5
100.01 - 200.00	4.27	97.69	21.5	73.0
200.01 - 500.00	2.14	99.83	22.6	95.6
500.01 - 1000.00	0.16	99.99	3.7	99.3
> 1000.00	0.01	100.00	0.7	100.0

Source: Saskatchewan Medical Care Insurance Commission Annual Report 1968.

TABLE 39

SASKATCHEWAN MEDICAL CARE INSURANCE PLAN
FAMILIES BY SIZE OF PAYMENT

Size of Payment	% Total Families	Cum. % Total Families	% Total Costs	Cum. % Total Costs
\$ 0.00	15.67	15.67	0	0
0.01 - 10.00	13.58	29.25	1.2	1.2
10.01 - 25.00	16.74	45.99	4.1	5.3
25.01 - 50.00	15.90	61.89	8.4	13.7
50.01 - 100.00	16.21	78.10	17.1	30.8
100.01 - 200.00	13.28	91.38	27.3	58.1
200.01 - 500.00	7.80	99.18	33.7	91.8
500.01 - 1000.00	0.77	99.95	7.1	98.9
>1000.00	0.05	100.00	1.1	100.0

Source: Saskatchewan Medical Care Insurance Commission Annual Report 1968.

TABLE 40

SASKATCHEWAN MEDICAL CARE INSURANCE PLAN

Services, per 1,000 beneficiaries, by sex, 1963 - 1968*

	MALE		FEMALE		ALL	
	Services	Percent change from previous year	Services	Percent change from previous year	Services	Percent change from previous year
1963	3942		5035		4472	
1964	4347	+ 10.3%	5600	+ 11.2%	4957	+ 10.8%
1965	4305	- 1.0%	5576	- 0.4%	4925	- 0.6%
1966	4724	+ 9.7%	6061	+ 8.7%	5382	+ 9.3%
1967	4920	+ 4.1%	6320	+ 4.3%	5611	+ 4.3%
1968	4709	- 4.3%	6266	- 0.9%	5477	- 2.4%

* Source: Saskatchewan Medical Care Insurance Commission Annual Reports, 1964 - 1968.

TABLE 41

MANITOBA MEDICAL SERVICE

"Costs"(1) per 1,000 subscribers, July - December

	ALL SUBSCRIBERS		S. A. M.	
	"Costs"	Change from previous year	"Costs"	Change from previous year
1962	\$19,251			
1963	19,556	+ 1.6%		
1964	18,813	- 3.8%	\$22,765	
1965	18,656	- 0.8%	23,968	+ 5.3%
1966	20,288	+ 8.7%(2)	27,028	+12.8%(2)
1967	20,986	+ 3.4%	28,441	+ 5.2%
1968	20,013	- 4.6%	28,153	- 1.0%

SOURCE: Manitoba Medical Services statistics - J.C. MacMaster

- (1) "Costs" for 1962 - 1967 are assessed costs at 100% of the 1961 Fee Schedule. (Actual payments were prorated) "Costs" for 1968 means payments to physicians, at 75% of 1967 Fee Schedule. Since the 1967 Fee Schedule was 30% - 32% higher than the 1961 Schedule, 75% of the former equals 100% of the latter. The above figures therefore represent an overall view of changes in utilization.
- (2) In January 1966 changes in general practitioner office call fees and ground rules were introduced, accounting for 4.7% increase in costs.

TABLE 42

MANITOBA MEDICAL SERVICE

	Number of Services per 1000 members per month			
	1965	1966	1967	1968(1)
1. Surgery	20.73	20.94	21.69	19.81(2)
2. Hospital Calls	70.84	71.70	73.22	75.42
3. Obstetrics	1.29	1.16	1.20	1.26
4. Anaesthesia	8.99	9.27	9.63	8.48(2)
5. Consultations	5.35	6.37	7.27	7.75(4)
6. Home Calls	26.65	25.10	22.26	20.44
7. Office Calls	217.39	222.35	230.15	226.13(2)
8. Laboratory	96.59	99.89	114.22	120.70(4)
9. ECG	5.56	5.66	6.31	6.73
10. X-Ray	23.04	23.72	25.91	40.09(3)
11. Refractions	9.47	9.76	9.92	10.39
12. Inj., Imm., Aller.	16.71	15.39	15.78	20.74
13. Med. Exams & Trt.	1.93	2.05	2.35	1.83(2)
14. E.S.T.	.97	.96	.92	.71(2)

SOURCE: Manitoba Medical Service statistics - Dr. J.C. MacMast

- (1) 1968 last six months only on account of new fee schedule.
- (2) Surgery, anaesthesia, office calls, medical examinations and treatments, and EST all fell, in face of previously rising or steady trend.
- (3) Division of radiology fees into "Professional" and "Technical" components resulted in many services being counted as two items in 1968. Utilization actually fell.
- (4) Consultation and laboratory rose less than would have been expected from trend of previous three years.

The Physician	Other Doctorates	University Graduates Or Approximate Equivalent	Technicians
Individual Medicine			
The Family Physician, or General Practitioner	All the specialties in medicine and dentistry, veterinary medicine and the basic sciences	Nurse Public Health Nurse Voluntary Nurses' Associations Social Workers of various types Occupational Therapist Physiotherapist Hospital Almoner Pharmacist Optician Dietitian Sanitary Inspector	Nurse Aide Laboratory Technician Volunteer Housekeeper
Anaesthesiology	Chemistry	Nurse Anaesthetist	
Dermatology and Syphilology			Chiropracist VD Technician

The Physician	Other Doctorates	University Graduates or Approximate Equivalent	Technicians
Individual Medicine			
General Surgery		Nurse Physiotherapist Occupational Therapist Instrument Maker	Nurse Aide
Internal Medicine Allergy Cardiology Gastro- enterology Haematology Endocrinology Tuberculosis	Chemistry Bacteriology Helminthology	Dietitian Pharmacist Nurse Social Worker Almoner	Nurse Aide Electro- cardiography Radiography Haematology Bacteriology Biochemistry Serology
Psychiatry	Psychologist Sociologist	Psychiatric Nurse Psychiatric Social Worker Speech Therapist	Nurse Aide
Neurology			Electro- encephalography

The Physician	Other Doctorates	University Graduates or Approximate Equivalent	Technicians
Individual Medicine			
Obstetrics and Gynaecology		Obstetric Nurse Midwife Physiotherapist	
Orthopaedic Surgery		Occupational Therapist Physiotherapist	Maker of artificial limbs
Ophthalmology		Optician Orthoptist Contact Lensmaker Artificial eye maker Teacher of the Blind	
Otolaryngology		Teacher of the Deaf	Audiometrist

The Physician	Other Doctorates	University Graduates OR Approximate Equivalent	Technicians
Individual Medicine			
Paediatrics		Nurse	Various laboratory and other technicians
Internal medicine		Social Worker	
Surgery		Teacher	
Psychiatry	Psychologist		
Infectious diseases	Geneticist		
Neurology			
Nutrition			
Ophthalmology			
Otolaryngology			
Pathology			
Bacteriology	Bacteriology	Bacteriology	Bacteriology
Virology	Biochemistry	Biochemistry	Biochemistry
	Helminthology	Helminthology	Helminthology
	Entomology		Entomology
	Virology		Virology
	Serology		Serology
	Immunology		Animal house technicians
			Tissue culture technicians
Physical Medicine		Physiotherapy Occupational Therapy Social Worker	

The Physician	Other Doctorates	University Graduates Or Approximate Equivalent	Technicians
Individual Medicine			
Plastic Surgery		As for General Surgery	
Radiology Diagnostic Therapeutic	Physicist	Radiographer Physicist	Photography Technician
Thoracic Surgeon Cardiac Surgeon The Team: Anaesthetists Internists		Engineer Nurse	Technician for Heart- Lung Machine
Neurosurgeon		As for General Surgery	
Urology		Male Nurse	
	Dentist Surgeon Orthodontist Periodontist Exodontist	Metallurgist Dental Mechanic	Dental Hygienist Radiographer
	Veterinarian	Chemist	Sanitarian

The Physician	Other Doctorates	University Graduates or Approximate Equivalent	Technicians
Individual Medicine			
GROUP HEALTH:			
Public Health Officer		Public Health Nurse	Nurse Aides Laboratory Technicians
General Physicians	Veterinarian	Health Visitor	Clerical Assistants
Industrial Physicians	Chemist	Nurse	
Physicians in the Armed Forces	Bacteriologist	Midwife	
School Medical Inspector	Nutritionist	Medical Aide	
Epidemiologist	Dairy and Farm Technologist	Sanitary Engineers	
	Physicist	Civic Engineers	
		Dietitian	
		Health Educator	
		Social Worker	
		Administrative Officer	
		Statistician	
Public Health Dentist			Dental Technician X-ray Technician
Administrative Medical Officers: Government Insurance Education Industry			Clerical Assistants Typists

APPENDIX TO CHAPTER 4

Medical Care

(A) The term "medical care" is made up of the following main components:-

- (1) prepaid insurance plans \$81.80
- (2) physicians' care, \$44.80 including
 - (a) visits \$24.60
 - (b) operations \$ 8.60
 - (c) confinements \$ 4.60
 - (d) oculist service \$ 2.60
 - (e) other \$ 4.40
- (3) Optometrists and opticians \$9.50
- (4) Dentists' care \$40.90
- (5) Osteopath, chiropractor and podiatrist (chiropodist), \$2.70
- (6) Medicines and drugs, \$50.00, including
 - (a) prescribed drugs \$36.30
 - (b) other drugs \$13.70

"Other" expenditures on "medical care" would be direct out-of-pocket payments for hospital care; and direct payments for x-rays, ambulance, tests, hearing aids and other appliances. Their total was \$21.10 out of the \$251 of average spending per family.

(B) It must be made clear that the spending figures relative to insured items may be far less than amounts actually paid by insurance agencies on behalf of the insured families. Such amounts are not known.

MAJOR ECONOMIC INDICATORS: Definitions and Components, Actual Values for 1967 and 1968

(A) Gross National Product: The total value at current market prices of all final goods and services produced by a nation's economy before deduction of depreciation charges and other allowances for business and institutional consumption of durable capital goods, and before deduction of indirect taxes.

GROSS NATIONAL PRODUCT (MILLION DOLLARS), CANADA, 1967 AND 1968

year	salaries, wages and supple- mentary labour income	military pay and allowances	corporation profits before taxes	deduct: dividends paid to non- residents	rent, interest and mis- cellaneous investment income	accrued net income of farm operators from farm production	net income of non-farm unincor- porated business	inventory valuation adjustment	net national Income at factor cost	Indirect taxes less subsidies	capital consumption allowances and mis- cellaneous valuation adjustments	gross national product of market prices ¹
1967	32,389	704	5,020	-798	4,339	1,698	3,194	-291	46,255	8,705	7,000	62,109
1968	35,225	696	5,877	-841	4,758	1,796	3,422	-305	50,628	9,521	7,260	67,368

A major component of the gross national product is "net national income at factor cost". Note that the net national income at factor cost is not the same as personal income. The former includes all earnings (wages, rents, interest, profit, etc.) of the suppliers of productive resources. But not all of these earnings are necessarily received by persons (e.g. corporations may reinvest part of their profits). Personal income, on the other hand, comprises all actual receipts by persons, including transfer payments. The relationship can consequently be expressed as follows:

Personal Income equals Net National Income plus Transfer Payments minus Earnings Not Paid to Persons

Gross National Product is the same as Gross National Expenditure. Receipts by suppliers of productive resources represent expenditures by buyers of goods and services, e.g. expenditures by consumers, business, and government. When looked at it in this way, the components of the gross national product are as follows:

GROSS NATIONAL EXPENDITURE (MILLION DOLLARS), CANADA, 1967 AND 1968

year	personal expenditure on consumer goods and services	government expenditure on goods and services	business gross fixed capital formation			value of physical change in inventories	exports of goods and services	deduct: imports of goods and services	residual error of estimate	gross national expenditure at market prices
			new construction	non-residential	residential					
1967	37,714	12,377	2,337	4,716	5,556	+225	14,748	-15,415	-149	62,109
1968	40,916	13,329	2,831	4,683	5,239	+660	16,735	-17,067	+42	67,368

(B) Personal Income: The personal income of Canadians is derived from the following sources:-

SOURCE OF PERSONAL INCOME (MILLION DOLLARS), CANADA, 1967 AND 1968

year	salaries, wages and supplementary labour income	deduct: employer and employee contributions to social insurance and gov't. pension funds	military pay and allowances	net income received by farm operators from farm production ¹	net income of non-farm unincorporated business	interest, dividends and net rental income of persons	transfer payments to persons		
							from government (excluding interest)	charitable contributions by corporations	personal income
1967	32,389	-2,031	704	1,785	3,194	4,894	6,223	44	47,202
1968	35,225	-2,298	696	2,022	3,422	5,315	7,194	48	51,624

(C) Personal Disposable Income: The following table shows the total disposition of personal income. The personal disposable income is the income remaining to persons after deducting personal direct taxes. Personal disposable income can be either spent or saved.

DISPOSITION OF PERSONAL INCOME (MILLION DOLLARS), CANADA, 1967 AND 1968

year	personal income total	deduct: personal direct taxes	personal disposable income	personal expenditure on consumer goods and services			personal saving	
				total	durable goods	non-durable goods	total	excluding farm inventory change
1967	47,202	-5,493	41,709	37,714	4,365	18,488	14,861	-124
1968	51,624	-6,660	44,964	40,916	4,805	19,695	16,416	+176
								3,872

APPENDIX TO CHAPTER 7

NOTE A:
COMMENTS ON THE SO-CALLED
"RELATIVE FEE SCHEDULE"
OF MANITOBA MEDICAL SERVICES

In an attempt to divide surgical fees into fees for operation and fees for pre- and postoperative care, the operating room records at the Winnipeg General Hospital were reviewed to determine the actual time taken for certain operations. The times recorded are from the beginning of the anaesthetic to the point where the anaesthetist declares the patient sufficiently recovered from the anaesthetic to return to the recovery room.

This is therefore a generous estimate of the time spent by the surgeon performing the operation but, does not include time spent waiting for O.R. preparation, etc., before anaesthesia begins. The cases were taken consecutively, going backwards from the end of May 1964 until a sufficient number had been collected.

Cholecystectomy includes cases with cholangiograms but does not include cases in which there was exploration of the common duct, as this operation has a separate and higher fee in the M.M.S. Schedule. Cases in which an appendectomy was performed en passant were included.

Appendectomy refers to cases where this was the major operation and not to appendectomy performed en passant.

Inguinal hernia refers to cases listed as such and does not include cases listed as recurrent inguinal hernia or bilateral inguinal hernia.

The consecutively selected cases included staff patients and those done by general practitioners as well as those performed by specialist surgeons. In general, staff cases took considerably longer than private cases

and therefore the estimates of mean time are on the high side. The figures for average total length of stay were supplied by the administrator of the Winnipeg General Hospital and were derived from a study carried out by the administration for the department of surgery in 1962. It included only non-staff patients.

The assessment of fee for the daily care has been calculated on the basis of one initial complete history and physical examination, a daily hospital visit fee (except for the day of operation) and one postoperative visit in the office. The difference between the total surgical fee and the daily care fee may therefore be regarded as the "operative fee".

CHOLECYSTECTOMY:

100 patients, time 40 - 145 minutes, mean 81 minutes \pm 2.6 (S.E.) - average total hospital stay - 16 days.

	<u>Specialist</u>	<u>G.P.</u>
Fee for hospital daily care	20.4 units *	15.1 units
Total surgical fee	55 units	47.0 units
Hence operative fee	34.6 units 25.6 units/hr.	31.9 units 23.6 units/h

APPENDECTOMY:

50 patients, time 15 - 95 minutes, mean 55 minutes \pm 2.4 (S.E.) - average total hospital stay - 9 days.

	<u>Specialist</u>	<u>G.P.</u>
Fee for hospital daily care	12 units *	9.0 units
Total surgical fee	35 units	35.0 units
Hence operative fee	23 units or 25.1/hr.	26.0 units 28.4/hr.

* The unit value was set at \$3.50 and Manitoba Medical Services arbitrarily pro-rated this amount according to the premium income available for distribution to doctors. However the reasoning contained in this paper would be applicable whatever the unit value and pro-rated.

INGUINAL HERNIA:

50 patients, time 30 - 130 minutes, mean 73 minutes \pm 3.3 (S.E.) - average total hospital stay - 10 days.

	<u>Specialist</u>	<u>G.P.</u>
Fee for hospital daily care	13.2 units *	9.9 units
Total surgical fee	30 units	30.0 units
Hence operative fee	16.8 units	20.1 units
	or 13.8/hr.	16.6/hr.

These figures invite a number of comments.

Why is the value of a surgeon's time assessed at approximately 25 units per hour when performing a cholecystectomy or an appendectomy but at only 14 units per hour when repairing an inguinal hernia? A similar disparity exists between the value placed upon the general practitioner's time when performing the same operations. Of these three operations, appendectomy requires the least technical skill, yet the general practitioner is apparently being paid more, on an hourly basis, for this operation than for the other two.

The general practitioner was paid between 16.6 and 28.4 units per hour for time spent in the operating room. To earn a comparable sum in his office he would have had to perform between 9 and 16 "Complete histories and physical examinations" per hour or see between 18 and 32 patients per hour for "subsequent visits".

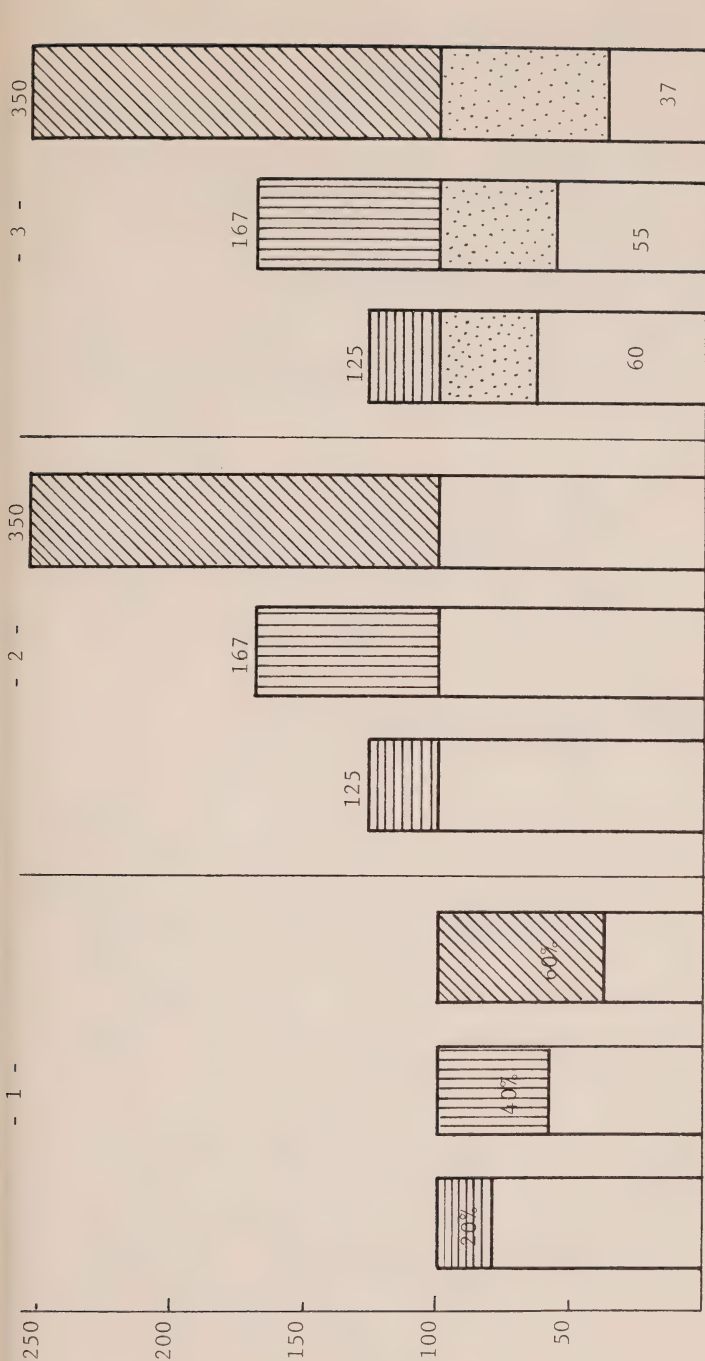
Similarly, a specialist surgeon would have had to perform between 3 and $5\frac{1}{2}$ consultations per hour or between $5\frac{1}{2}$ and $10\frac{1}{2}$ "Complete histories and physical examinations" per hour to equal the rate that he was paid in the operating room.

* The unit value was set at \$3.50 and Manitoba Medical Services arbitrarily pro-rated this amount according to the premium income available for distribution to doctors. However the reasoning contained in this paper would be applicable whatever the unit value and pro-rated.

The effect on net earnings is even greater than it seems, since time spent in the operating room does not involve the doctor in any overhead expenses whereas maintaining an office involves an overhead of between 25% and 40%.

It may be argued that the surgeon's proper place is in the operating room, and that it is right that he should be paid proportionally more for operating than for seeing patients in his office. The same argument surely cannot be made in the case of the general practitioner. A fee schedule which encourages the general practitioner to desert his family practice for the sake of surgery is a bad fee schedule.

Just as the surgeon's proper place is in the operating room, so the proper function of the internist is in carrying out consultations and complete histories and physical examinations on patients with difficult medical problems. In order to achieve the operating fees of the specialist surgeon it would have been necessary for the internist to carry out between $2\frac{1}{4}$ and $4\frac{1}{4}$ consultations per hour, or between 4 and 7 "complete histories and physical examinations". This is manifestly absurd.



1. NET REWARD FROM \$100.00 FEE FOR SERVICES WITH DIFFERENT EXPENSE RATIOS.

2. GROSS FEE REQUIRED TO YIELD \$100.00 NET FROM SERVICES WITH DIFFERENT EXPENSE RATIOS. AN EQUITABLE RELATIVE FEE SCHEDULE WOULD ENSURE THAT THESE SERVICES REQUIRED SIMILAR SKILL AND TIME.

3. SEVENTY-FIVE PER CENT PRO-RATING TO GROSS FEES RESULT IN DIFFERENT NET REWARDS.

NOTE B: DIAGRAMS ILLUSTRATING EFFECT OF CHANGES IN FEE-SCHEDULES UPON NET FEES OF PHYSICIANS WITH DIFFERING EXPENSE RATIOS.

NOTE C:
EFFECT OF APPLICATION OF
INDICES ON NET INCOMES

Examples of what would happen to net income (gross income after expense) if fees were increased 25% [(Wages and Salaries x 3 + cost of living x 2) + 5] over a period of time, when the proportions spent on operating expenses and the type of expenses are different. Wages and salaries rose 35% and the cost of living 12% over this period. (Other expenses are assumed to increase at approximately the same rate as the cost of living.)

	Beginning of period	Result after 25% increase in fees	Percentage Increase
	\$	\$	%
<u>Doctor A</u>			
Gross Income from fees	40,000.00	50,000.00	25.0
Expenses 40% of Gross before increase.....	16,000.00	20,128.00	25.8
(a) salaries (60%)	(9,600.00)	(12,960.00)	35.0
(b) other expenses (40%)	(6,400.00)	(7,168.00)	12.0
Net Income	<u>24,000.00</u>	<u>29,872.00</u>	<u>24.5</u>

<u>Doctor B</u>			
Gross Income from fees	40,000.00	50,000.00	25.0
Expenses 40% of Gross before increase.....	16,000.00	19,760.00	23.5
(a) salaries (50%)	(8,000.00)	(10,800.00)	35.0
(b) other expenses (50%)	(8,000.00)	(8,960.00)	12.0
Net Income	<u>24,000.00</u>	<u>30,240.00</u>	<u>26.0</u>

Doctor C

Gross Income from fees	40,000.00	50,000.00	25.0
Expenses 60% of Gross before increase.....	24,000.00	30,192.00	25.8
(a) salaries (60%)	(14,400.00)	(19,440.00)	35.0
(b) other expenses (40%)	(9,600.00)	(10,752.00)	12.0
Net Income	<u>16,000.00</u>	<u>19,808.00</u>	<u>23.8</u>

Doctor D

Gross Income from fees	40,000.00	50,000.00	25.0
Expenses 25% of Gross before increase.....	10,000.00	12,580.00	25.8
(a) salaries (60%)	(6,000.00)	(8,100.00)	35.0
(b) other expenses (40%)	(4,000.00)	(4,480.00)	12.0
Net Income	<u>30,000.00</u>	<u>37,420.00</u>	<u>24.7</u>

Beginning of period	Result after 25% increase in fees	Percentage Increase
\$	\$	%

Doctor E

Gross Income from fees	40,000.00	50,000.00	25.0
Expenses 25% of Gross before increase.....	10,000.00	12,120.00	21.2
(a) salaries (40%)	(4,000.00)	(5,400.00)	35.0
(b) other expenses (60%)	(6,000.00)	(6,720.00)	12.0
Net Income	<u>30,000.00</u>	<u>37,880.00</u>	<u>26.3</u>

Examples of what would happen to net income (gross income after expenses) in fees were increased 30% [(Wages and Salaries x 3 + cost of living x 1) ÷ 4] over a period of time, when the proportions spent on operating expenses and the type of expenses are different. Wages and salaries rose 35% and the cost of living 12% over this period. (Other expenses are assumed to increase at approximately the same rate as the cost of living.)

	Beginning of period	Result after 30% increase in fees	Percentage Increase
	\$	\$	%
<u>Doctor A</u>			
Gross Income from fees	40,000.00	52,000.00	30.0
Expenses 40% of Gross before increase.....	16,000.00	20,128.00	25.8
(a) salaries (60%)	(9,600.00)	(12,960.00)	35.0
(b) other expenses (40%)	(6,400.00)	(7,168.00)	12.0
Net Income	<u>24,000.00</u>	<u>31,872.00</u>	<u>32.8</u>

<u>Doctor B</u>			
Gross Income from fees	40,000.00	52,000.00	30.0
Expenses 40% of Gross before increase.....	16,000.00	19,760.00	23.5
(a) salaries (50%)	(8,000.00)	(10,800.00)	35.0
(b) other expenses (50%)	(8,000.00)	(8,960.00)	12.0
Net Income	<u>24,000.00</u>	<u>32,240.00</u>	<u>34.3</u>

<u>Doctor C</u>			
Gross Income from fees	40,000.00	52,000.00	30.0
Expenses 60% of Gross before increase.....	24,000.00	30,192.00	25.8
(a) salaries (60%)	(14,400.00)	(19,440.00)	35.0
(b) other expenses (40%)	(9,600.00)	(10,752.00)	12.0
Net Income	<u>16,000.00</u>	<u>21,808.00</u>	<u>36.3</u>

	Beginning of period	Result after 30% increase in fees	Percentage Increase
	\$	\$	%
<u>Doctor D</u>			
Gross Income from fees	40,000.00	52,000.00	30.0
Expenses 25% of Gross before increase.....	10,000.00	12,580.00	25.8
(a) salaries (60%)	(6,000.00)	(8,100.00)	35.0
(b) other expenses (40%)	(4,000.00)	(4,480.00)	12.0
Net Income	<u>30,000.00</u>	<u>39,420.00</u>	<u>31.4</u>

<u>Doctor E</u>			
Gross Income from fees	40,000.00	52,000.00	30.0
Expenses 25% of Gross before increase.....	10,000.00	12,120.00	21.2
(a) salaries (40%)	(4,000.00)	(5,400.00)	35.0
(b) other expenses (60%)	(6,000.00)	(6,720.00)	12.0
Net Income	<u>30,000.00</u>	<u>39.880.00</u>	<u>32.9</u>

APPENDIX TO CHAPTER 9

Utilization Changes

Relating To Changes In Allowed Fees

- (1) As directed, this study was undertaken to extract, if possible, from statistics covering periods before and after Fee Schedule changes examples of increased utilization connected with upward adjustments of fees and vice versa.
- (2) For this purpose, the statistical material related to the changeover from
 - (i) the 1958 Fee Schedule to the 1963 F.S., and
 - (ii) the 1963 F.S. to the 1967 F.S.has been scrutinized. The most obvious and convincing examples are reported on Table 1 (page 352) and on Table 2 (pages 356 and 357).
- (3) Due to the fact that the reports which form the basis of Table 2 have been processed on the 1401 computer and cover the most recent comparable periods, Table 2 has become more elaborate and should also possess more weight, although Table 1 already provides sufficient evidence for a direct relationship between fee and utilization.

TABLE 1:
CHANGE FROM 1958 TO 1963 FEE SCHEDULE
COMPREHENSIVE PLAN

Comparison of Year 1963 with Year 1964 Experience
(Each Paid Period: March 1 to February 28)

No.	Description (*)	FEE (NET PAID)		NO. OF SERVICES PER 1000 M/M		% Increase (Decrease)	
		1963	1964	1963	1964		
1	Fractures	\$39.30	\$31.73	1.126	1.1087	(1.5)	
2	Lacerations - all types	7.20	7.06	2.392	1.7713	(25.9)	
3	Surgical Assistants	30.04	28.10	1.774	1.6738	(5.6)	
4	Anaesthesia	16.89	17.16	5.065	5.6123	10.8	
5	Total Office Calls	2.67	2.76	3.4	173.770	177.8399	2.3
6	Home Calls- Extra Patient	2.55	2.43	(4.7)	8.143	5.664	(30.4)
7	Refractions	8.51	7.89	(7.3)	6.274	5.9894	(4.5)

(*) NOTE: For additional information see notes on following pages.

NOTES TO TABLE 1

1. Fractures

The 1963 F.S. contains a catalogue of 97 different items under this heading while the 1958 F.S. lists 68 only under frequently differing definitions. Generally, there were more fee decreases than increases in this group, and according to the actual average fee paid such decreases would predominantly cover high frequency items.

2. Lacerations

The 1958 F.S. shows "According to circumstances" in lieu of a fee, while the 1963 Schedule calls for visit fees for burns and from \$10-\$15 for sutures. Again, the average net paid indicates a small reduction per service.

3. Surgical Assistants

The 1958 F.S. lists 25% of surgical fee with a minimum of \$15 while the 1963 F.S. (negotiated) paid 20%, minimum also \$15.

4. Anaesthesia

Here the two Schedules differ completely, the '58 Schedule showing 226 items in Section B, whereas the '63 Schedule lists the anaesthetic fee applicable to each of the hundreds of individual surgical procedures. Although a comparison reveals many fee increases (such as from \$10 to \$12, from \$18 to \$20, etc.) and only the odd reduction, the actual experience of the net amount paid per service expresses an overall decrease.

5. Total Office Calls (First and subsequent calls combined).

Here the comparison with the 1965 experience is interesting:

<u>FEE (NET PAID)</u>			<u>NO. OF SERVICES PER 1000 M/M</u>		
<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
\$2.67	\$2.76	\$3.00	173.770	177.8399	179.0294
% Increase:			3.37	8.70	2.34
					.67

6. Home Calls - Extra Patients (Each additional member of family).

Here again the addition of the 1965 figures is rather revealing:

<u>FEE (NET PAID)</u>			<u>NO. OF SERVICES PER 1000 M/M</u>		
<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
\$2.55	\$2.43	\$1.92	8.143	5.664	4.4874
% Decrease:			4.71	20.99	30.44
					20.77

In this connection, it should be mentioned that beginning 1963 M.M.C.'s exceptionally high ratios for home and night calls have been subject to a steady reduction. This may have been due in part to a prevailing trend in general practice to concentrate more on office calls, however, the internal control measures and follow-up with a number of individual doctors certainly have also contributed to this effect. - The fee increase from \$4.00 (initial home call)/\$5.00 (night call) under the 1958 F.S. to \$5.00/\$6.00 under the 1963 F.S. (negotiated: Subsequent home calls \$4.00, same as before) did not counteract this development to relatively fewer home visits.

7. Refractions

Both the 1958 and the 1963 F.S. list \$10 for a refraction. However, the latter was modified to \$7.50 (with mydriatic) and \$5.00 (without)

respectively, and these reduced rates were in effect from July 1-September 30, 1964. Effective October 1, 1964 the \$10 fee was re-instated.

This limited time reduction of fee paid had the effect of a 4.54% reduction of the service ratio and is as such a rather convincing example of fee changes influencing the utilization.

TABLE 2:

CHANGE FROM 1963 TO 1967 FEE SCHEDULECOMPREHENSIVE PLAN

Comparison of (A) the last 12 months paid 90% (*) as per 1963 F.S. (paid December 1966 to November 1967) with (B) the first 12 months paid 90% as per 1967 F.S. (paid December 1967 to November 1968).

(*) NOTE: Proration changed from 85% to 90% effective December 1, 1965.

<u>No.</u>	<u>Description</u>	<u>FEE (100%)</u>		<u>% Increase (Decrease)</u>	<u>NO. OF SERVICES PER 1000 M/M</u>		<u>% Increase (Decrease)</u>
		<u>(A)</u>	<u>(B)</u>		<u>(A)</u>	<u>(B)</u>	
1	Allergy testing and treatment	\$2.41	\$2.50	3.7	6.40	6.89	7.7
2	Electrocardio- gram	9.02	9.56	6.0	1.87	1.96	4.8
3	Injectons and Immunizations	2.47	3.00	21.5	16.36	16.97	3.7
4	Refraction	10.00	14.84	48.4	7.09	7.63	7.6
5	<u>Consultations</u> (major and minor)	16.18	21.16	30.8	9.01	10.17	12.9
6	<u>Calls</u>						
a.	First Office Calls	4.12	5.12	24.3	123.51	124.51	.9
b.	Subs. Office Calls	3.06	3.95	29.1	49.60	65.16	31.4
c.	Total Office Calls	3.81	4.72	23.9	173.11	189.81	9.7

No.	Description	FEE (100%)		NO. OF SERVICES PER 1000 M/M		% Increase (Decrease)
		(A)	(B)	(A)	(B)	
7	Total Hospital Calls	\$ 2.91	\$ 4.06	48.98	50.58	3.3
8	Sunday and Holiday Calls	5.94	9.82	1.27	2.81	121.3
9	For Comparison:					
	Total Home Calls	5.12	6.86	42.11	38.54	(8.5)

	Other Items:					
10	Confinements	78.45	93.37	1.15	1.22	6.1
11	Detention	12.47	15.85	.10	.15	52.6
12	Psychiatric Care	10.23	12.17	4.45	4.91	10.3

NOTES TO TABLE 2

- (a) The tables contain the more explicit examples of fee increases with corresponding increases in utilization. Since the same F.S. codes have been used throughout both periods and the benefit range remained unchanged, this comparison should provide solid manifestation of an existing direct bearing of the fee level on the degree of utilization.
- (b) Regarding the relatively low utilization increase in total hospital calls, it should be mentioned that total hospital bed accommodation in the province had already been taxed to capacity prior to period (A) and that for this reason there was very little scope for growth of utilization.
- (c) The trend shown for Sunday and Holiday Calls is an almost classical example of the interrelationship between fee level and utilization. In this case, it is all the more striking because the utilization of all other house calls showed a continued decreasing ratio.
- (d) The figures reported for confinements are somewhat puzzling because Nova Scotia as a whole reported a continued drastic lowering of the birth rate. The M.M.C. ratios appear to point to the fact that an adverse selection of maternity cases (as compared to the total population) took place within the Plan.
- (e) All other examples are self-explanatory.

TASK FORCE ON COSTS OF PUBLIC HEALTH SERVICES

Chairman

Dr. K. I. G. Benson,
Victoria, B.C.

Members

Dr. Julien Denhez,
Montreal, Que.

Dr. Eric Hanson,
Edmonton, Alta.

Dr. Gordon Josie,
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Miss Louise Miner,
Regina, Sask.

Dr. F. D. Mott,
Toronto, Ont.

Mr. W. B. Nichols,
Toronto, Ont.

A series of one or two-day meetings was held in Toronto between February and June, 1969, at which various papers were presented by task force members and in discussion, a general consensus was reached.

In view of the shortage of time, it early became evident that although the task force would be in a position to make recommendations with respect to changing emphasis in preventive practice and in the delivery of health care at the community level with or without corresponding implications for treatment services, it would not be possible to identify costs in terms of dollar values.

It was agreed that if dollar values were required, it would be necessary to carry out additional studies in the months following the submission of this final report.

STATEMENT

When the Task Force came to consider the question of costs of public health services, the approach adopted was occasioned by the following viewpoint:

"That the practice of public health involves three components:

- prevention to include health promotion and maintenance.
- concern with the organization and delivery of health care at the community level to include the assessment of resources in relation to actual and anticipated health needs.
- the early identification and bringing under adequate care of individuals in need of health care".

For this reason the task force members suggest that the term "Preventive and Community Health Services" would more accurately reflect these roles than "Public Health" and will use the former concept in this report.

It should be noted that these functions contrast with the "demand" for treatment services but that if practised effectively, a resultant saving in the costs of treatment services will occur.

In considering government expenditures for health services in general, Task Force members had the benefit of a review (see appendix) by Professor Eric Hanson of trends that have taken place over the past 20 years. We were impressed by the magnitude of the increases in total expenditures and particularly by the proportions (percentages) spent on the four major health functions. First, the expenditure on general and public health declined from six per cent to five per cent of the total expenditure on health between 1955-68.

Thus about 95 per cent of all health expenditure is devoted to operational and curative aspects, in comparison with about five per cent for prevention (public health), education and training, and research. Of this five per cent approximately two-and-a-half per cent is for education, training and research and this component is increasing.

It must be emphasized therefore that over 95 per cent of these health costs are represented by the treatment component, including hospital and medical care costs. It is our belief that an increase in the non-treatment (i.e. public health) component may make a substantial contribution towards the objectives set out for all task forces "of maintaining the costs of health services at a reasonable level".

In addition, it would appear that little can be accomplished in checking the rapid rise in government expenditures generally by restraining or reducing expenditures on public health.

At the same time, the practice of public health itself is neither as effective nor as economic as might

be and cost/benefit studies should be carried out by public health departments wherever possible as part of a continuing evaluation, not only of specific program areas but also as they relate to the total spectrum of health care.

In addition, more meaningful and comparable public health practice statistics should be made available to facilitate more effective evaluation of existing services and programs. It is further evident that the effectiveness of public health programs is also compromised by shortages of trained public health personnel and particularly by lack of health administrators of senior grade to provide imaginative leadership.

The organization of the official health agency should be strengthened at all levels, federal, provincial regional and local, in relation to health objectives and economic considerations.

Recommendation 1:

That the leadership role of the federal government in respect to promoting and safeguarding the health of the Canadian people be recognized with particular reference to planning, promulgation of standards, research and education.

Recommendation 2:

That operational responsibility be accepted by the provincial public health departments for program development; for the implementation of standards; and for recruitment and employment of at least senior, if not all, (local) health unit personnel.

Recommendation 3:

That to effect program development and the setting of standards, a cost-sharing arrangement be arrived at with the local area on an approved program basis within a net sharable budget.

Recommendation 4:

That depending upon population density, the optimum population for a health unit outside metropolitan areas lies between 75,000 and 150,000. Within metropolitan areas there should be established one overall health department for policy and planning but the delivery of public health services should be effected by a health unit organization based on districts.

REGIONALIZATION

The concept of organizing all personal and community health services on a regional basis offers promise of achieving economies through the planning and consolidation of functions, the elimination of duplication in facilities and services, the maximum utilization of professional and technical health personnel and the mobilization of participating leadership from the health field and the general public in each region.

Recommendation 5:

That regionalization of health services be encouraged for research and planning functions, to improve communication between departments and agencies and to foster the effective coordination of health activities within the region. It would be expected that selected operational responsibilities would be delegated to the regional level.

LEVELS OF COMMUNITY CARE

Recommendation 6:

That to effect cost savings, public provision be made for levels of community care alternate to the acute hospital.

Recommendation 7:

That the patient be cared for at an appropriate level (acute; chronic; convalescent; intermediate; boarding home; home care; ambulatory care) i.e. the level suited to his condition and which is most economic.

Recommendation 8:

That the level of support offered to the physician outside the hospital be such that he be encouraged to use levels other than the acute hospital and be enabled to do so without creating either an additional workload for himself or an additional cost to his patient.

Recommendation 9:

That the patient who occupies other than an acute care bed should not be faced with an increased personal cost.

Recommendation 10:

That the alternatives to acute care provide an effective means of reducing or limiting the number of acute care beds required.

HOME CARE PROGRAMS

Home Care should not be offered primarily as a substitute for hospital care; it should be recognized that it is in fact the provision of care at an appropriate level for the patient. For this reason the purposes of a home care program might be stated in the following order:

- (1) to provide the treatment of choice in the location of choice for selected patients.
- (2) to avoid the need for admission to hospital or other institution.
- (3) to reduce the length of institutional stay, particularly of hospital stay.

Recommendation 11:

That expansion of home care programs be encouraged. (It is recognized that when the number of acute beds is limited home care programs will prove particularly useful and valuable and their utilization will be facilitated.)

Recommendation 12:

That the services to be offered by home care programs should include:

- physician care; nursing; physiotherapy; occupational therapy; speech therapy; dietary counselling.
- certain drugs, appliances and laboratory services.
- home-maker and housekeeper services.
- ancillary services as required to include transportation, meals-on-wheels, social work, etc.

Recommendation 13:

That the provision of home care programs be recognized as a responsibility of the public health agency and coordination of services including hospital liaison as a responsibility of agency staff; and that these programs be community based so that all residents of the area may be served, not just those discharged from hospital, and so that the broadest possible range of services and agencies may be coordinated within the community.

Recommendation 14:

That voluntary health agencies be "phased in" to give service as part of the overall plan for home care.

Recommendation 15:

That the service should be available 24 hours a day for emergency and acute situations, but that otherwise normal working hours, to include weekends, be maintained.

Recommendation 16:

That all services to be included should be prescribed by the attending physician.

Recommendation 17:

That special consideration should be given to looking after sick children at home.

UTILIZATION OF PERSONNEL

In a labour intensive field such as health, gains from automation may be particularly significant while on the other hand, the need to make effective use of staff and to ensure adequate training of personnel is also of paramount importance. Presently it is recognized that health personnel are:

- incorrectly used, e.g. the majority of psychiatrists practising full-time on a one/one patient relationship rather than as community consultants.
- under-utilized, e.g. general practitioner performing tasks that could be carried out by the public health nurse and in turn the public health nurse, basics of the registered nurse; the engineer doing jobs that could be done by the public health inspector; the public health nurse performing non-professional clerical duties that should be done by clerical staff.
- creating areas of potential duplication, e.g. departments of education providing health services; the activities of certain voluntary health agencies, etc.

Recommendation 18:

That personnel be utilized at the level for which they are trained so that more effective and economic care is obtained. This will involve changes in present role and functions and greater use of auxiliaries, paramedical staff, allied health workers, and clerical workers.

Recommendation 19:

That legal barriers be removed to allow acceptance of appropriate changes in responsibility among all health personnel.

Recommendation 20:

That adequate salary scales be developed to ensure competence and that health administrators will have to look ahead and build in rising salary and wage rates.

EDUCATION AND TRAINING OF PUBLIC HEALTH PERSONNEL

The effectiveness of public health programs will depend on the availability of well qualified personnel in the various disciplines of public health and particularly on senior personnel faced with responsibility for leadership, planning, innovation and evaluation of performance.

Recommendation 21:

That university educational programs in public health be strengthened through increased financial support to enable them to meet expanding needs.

Recommendation 22:

That there be more stress in these programs on training key members of the public health team together in joint classes and seminars.

Recommendation 23:

That future health administrators receive further orientation in the theory and practice of new management techniques.

Recommendation 24:

That supervised field experience be an integral part of education in public health.

Recommendation 25:

That to the extent courses in public health must be lengthened, programs of financial assistance such as bursaries be revised appropriately.

Recommendation 26:

That advanced courses in health services administration be made available by the schools of public health to experienced public health personnel who have shown promise of administrative competence and qualities of leadership.

COMMUNICABLE DISEASE CONTROL

Recommendation 27:

That communicable disease control programs be expanded and extended, particularly through aggressive planning and operation of immunization activities.

Recommendation 28:

That guidelines be prepared and revised as indicated so that medical health officers will be aware of what might be considered an adequate level of immunization and that immunization procedures be standardized within each province at least. That consideration be given to reducing the number of booster shots, particularly for the school-age child, and that the possibility of utilizing a smaller dosage of vaccine than that recommended by the manufacturers be explored.

Recommendation 29:

That since immunization procedures can be carried out more economically and efficiently by public health agencies than by practising physicians, the agency approach be emphasized.

Recommendation 30:

That all immunization procedures generally be carried out by the public health nurses under physician supervision, in the interests of reducing

costs of medical care and of improving record keeping. Expansion of this program will have long-term beneficial effects in maintaining costs while the change to standardization and use of public health nurses exclusively, can have an immediate effect in reducing costs. (See Appendix II, "The Cost of Measles to the Public, British Columbia, 1967").

Recommendation 31:

That the public health nurse be trained to give routine immunizations and that she be knowledgeable as to contraindications and any sensitivity reactions that might occur and trained in giving the necessary treatment. Written guidelines and the necessary material for emergency treatment should be made available to her.

Recommendation 32:

That evaluation of current programs to determine their value be carried out by searching hospital records, for example for incidence of rheumatic fever and readmissions to hospital beds.

Recommendation 33:

That consideration be given to the central purchasing of vaccine and other equipment.

Recommendation 34:

That although it is agreed that effective control must be maintained in the tuberculosis control program, rigid evaluation be carried out to ensure that time and monies presently being expended in tuberculosis control are not excessive. This should include time spent by public health nursing staff in the field.

Recommendation 35:

That consideration be given to merging remaining tuberculosis control activities with other communicable disease control activities (for example venereal disease control programs) within individual health departments.

CASE-FINDING PROGRAMS

Case-finding or the detection of established disease represents an activity that must be distinguished from screening. At the present time case-finding is a valuable program and there are a number of patients with conditions that could be alleviated by treatment, who do not utilize the services available, e.g. psychiatric conditions, alcoholism, and hypertension. It is reported that about 50 per cent of newly diagnosed diabetics have had symptoms of diabetes for nearly four months before diagnosis. In general, the earlier the condition that lends itself to treatment can be diagnosed, the more speedily can it be alleviated.

Recommendation 36:

That family physicians be given ready access to diagnostic facilities, e.g. the use of X-rays as a service to patients referred by their family physician is a more effective utilization of X-rays than in mass screening of the general population.

Recommendation 37:

That the public be educated about the symptomatology of conditions that can be alleviated and are thought to be significantly under-reported to doctors.

Recommendation 38:

That further research, experimentation and evaluation be conducted in techniques of case-finding, e.g. why some people with similar symptoms do, and some do not, consult their doctor.

SCREENING PROGRAMS

The ultimate value of many techniques for screening has not yet been proven and the implementation of screening programs should be viewed with caution.

Recommendation 39:

That screening programs be considered in the light not only of their potential for identifying the condition but also the effectiveness of current treatment methods and the cost/benefit in relation to time/personnel.

Recommendation 40:

That screening programs must be applied on the basis of age groups and groups "at risk" with special emphasis being put on younger age groups.

Recommendation 41:

That since the value of certain multi-phasic screening programs, for example glaucoma and hypertension, have not yet been proven and in some instances the absence of available treatment does not justify the program, intensive study with respect to follow-up results should be carried out. Until this has been done, these programs are not recommended for general implementation.

Recommendation 42:

That the use of mass X-ray be considered in relation to the law of diminishing returns in terms of cost/benefit. (To find one case of infectious tuberculosis using mass X-rays in one province in Canada today costs approximately \$30,000 and some of these cases were already known).

Recommendation 43:

That routine chest X-ray programs be applied to high-risk groups only, e.g. Indian, skid-row and gaol populations, in homes for the aged and perhaps at 60 years and over. Also for those with a "high dispersal risk" such as school teachers.

Recommendation 44:

That hearing screening in children be implemented in the six to nine month age group to identify problems, but not for

newborn babies in view of the expense of the equipment and the fact that identification at this very early age is unnecessary.

Recommendation 45:

That hearing screening be pursued through the pre-school years in captive situations wherever possible to include day care, nursery and kindergarten centres.

Recommendation 46:

That vision screening be conducted and again beamed primarily at the pre-school child and repeated during the school years. Use of the Snellen chart as a screening procedure appears adequate and is economical.

Recommendation 47:

That the phenylketonuria program using the Guthrie test be implemented as a valid diagnostic tool but that the value of the low phenylalanine diet be assessed more carefully with respect to prevention of mental retardation.

Recommendation 48:

That the cancer cervical cytology program be continued at least until such time as its value is clarified.

SELECTIVE FAMILY PLANNING AND GENETIC COUNSELLING

Although Canada does not face a problem of overpopulation, this problem does exist with respect to individual families. Further, the official agency must be concerned on a selective basis with persons having a genetic problem history, with the promiscuous young female and with the multipara of low income who is ignorant of the services available.

In genetic counselling, the aim is to inform the parents of the risk to their children of inheriting an inadequate trait. If this trait is disabling such as muscular dystrophy, or results in community expense such

as with cystic fibrosis, the parents have a responsibility to consider limiting their offspring and the community has a responsibility to provide the necessary assistance to accomplish this aim. They need genetic counselling, family planning services and special adoption placement services in certain cases.

Recommendation 49:

That the public health agency in conjunction with the family physician ensure that selective family planning services to include all related costs are made available to all people.

Recommendation 50:

That genetic counselling is made available to parents in need of it.

Recommendation 51:

That on a short-term basis, promotional activities should include educational programs with pamphlets being made available to the public to outline services and procedures. On a longer term basis, a more permanent educational program to prepare each generation to accept these services must include educational programs in schools, in schools of nursing and medicine. Increased expenditures in this area now will certainly reap major long-term benefits.

SCHOOL HEALTH SERVICES

Public health service to the child in school is important but the costs of rendering these services can be reduced while retaining their effectiveness.

Recommendation 52:

That one agency and one only, give service in the schools and that the agency best suited to do so is the health department and not the department of education.

Recommendation 53:

That health departments consider discontinuing the routine physical examination as offered in school and substitute a system of referral and adequate follow-up together with the strengthening of screening programs to include those for vision, hearing, emotional disturbance, etc. This will serve to reduce payments to physicians for such routine examinations.

Recommendation 54:

That the proportion of public health nursing time spent giving service actually in the school is too great and should readily be reduced. It is suggested that not more than approximately 25 per cent of total public health nursing time be spent on the school health program to include home visits in connection therewith.

MENTAL HEALTH

The public generally are becoming much more knowledgeable as to the nature and effects of mental disorders. As a result the demand for more services and higher standards of care for the mentally ill and the retarded will undoubtedly increase. At the same time, there is a severe shortage of skilled, trained psychiatric personnel to include psychiatrists, psychologists and psychiatric social workers. For these reasons, these highly trained personnel must not be tied down on a one/one relationship with the patient if the demand is to be met in as economical a manner as possible.

In view of the fact that more than one-third of the total patient days of hospital care are provided by mental hospitals and psychiatric units in general hospitals, and since approximately 20 per cent of hospital expenditures are in this area, there is no question about the need for a more active role by the official

local health agency in the provision of preventive and community mental health services. Many of the recommendations pertaining to physical conditions, and particularly the recommendation (No. 3) respecting "levels of care" have application in this field. The concept of prevention/community versus patient/treatment in psychiatric practice must be recognized and related to increasing demand for service and shortage of psychiatric personnel. There is a need to permit psychiatrists to serve as many people as possible by utilizing community resource health and allied workers.

Recommendation 55:

That health departments give increasing attention to development of more adequate programs for the prevention, early diagnosis and rehabilitation of the mentally ill and retarded at the community level.

Recommendation 56:

That psychiatrists and other mental health specialists be used as consultants to offer consultation and to provide education to community resource workers; that psychiatrists not be overloaded with administrative duties for example, as health clinic administrators and that their training be modified to equip them for the "mental health consultant" role in the community setting.

Recommendation 57:

That community mental health clinics to include child guidance services be established in public health centres. In a parallel development acute intensive psychiatric care beds should be made available within the local general hospital. This latter development recognizes the need for "secondary prevention" which can offer much towards reducing chronicity in mental illness.

Recommendation 58:

That the family physician be encouraged to accept increased responsibility in dealing with troubled individuals and families and that the schedule of fees be reviewed in this context.

Recommendation 59:

That "sheltered workshops" be developed in the community so that patients may be trained or retrained and through the services of Manpower, etc. and placed in suitable occupations.

Recommendation 60:

That to meet increasing public demands for service, community resource health and allied workers to include the family physician, the medical officer of health, the public health nurse, the social worker, the clergy and others attached to education and correctional agencies be made available in the community to work with the trained psychiatric personnel.

PREVENTIVE DENTAL HEALTH SERVICES

In Canada today, dental ill health is recognized as a major public health problem both in terms of disability and costs of treatment. Techniques are available which will lower the prevalence of dental disease and abnormality and by instituting early treatment, the greater cost of treating "dental cripples" will be obviated. At this time, utilization of these techniques in many parts of Canada is almost totally neglected.

Recommendation 61:

That fiscal support be provided for the fluoridation of community water supplies.

Recommendation 62:

That all regional preventive dental programs be under the direction of a dentist with graduate training in dental public health.

Recommendation 63:

That health departments initiate programs to encourage regular preventive dental care commencing at three years of age.

Recommendation 64:

That health departments employ adequate numbers of dental hygienists to carry out effective screening, educational and prophylactic programs in the school and pre-school age groups.

Recommendation 65:

That pre-payment dental care insurance plans be expanded and be made available to children as a first priority.

Recommendation 66:

That financial encouragement be provided for the training of dental auxiliaries to assume certain functions presently carried by dental practitioners.

ACCIDENT PREVENTION

The importance of accidents as a leading cause of death between one and 30 years of age is recognized.

Recommendation 67:

That further analysis of available statistics should be pursued to identify the contributions of accidents to hospital occupancy and costs particularly with respect to motor vehicles and to accidents occurring among the elderly at home.

Recommendation 68:

That further consideration and action should be taken by health agencies to propose and advise on legislative provision in accident prevention with respect to highway design, traffic control, the use of seat belts, etc. There is also a need for legislation respecting the use and misuse of drugs and other potentially hazardous substances.

Recommendation 69:

That screening of drivers as to their "medical fitness to drive" be incorporated as part of the process of determining the fitness to drive of the elderly or those suffering from a disease process which places them at risk in this context.

Recommendation 70:

That health agencies take the initiative in providing adequate coordination in accident prevention activities of official and voluntary health agencies, departments of education, traffic control, police, etc.

HEALTH EDUCATION

If by education, individuals can be motivated to take advantage of the services offered or to adapt their way of life to healthful living, then in the long run this will have an effect on the cost of treatment services.

Recommendation 71:

That health education consultants concern themselves primarily with providing the technical "know-how" and materials to support health unit staff who can best carry out the necessary education.

Recommendation 72:

That health curricula in schools be revised and that courses in "Family Life Education" be provided.

Recommendation 73:

That diet counselling services and nutrition information should be incorporated as part of the overall health education program, being made available through home care services, health teaching in schools, etc.

Recommendation 74:

That health education activities should be expanded and intensified but subjected to more critical evaluation with respect both to their effectiveness in informing the public and especially in influencing behaviour in the desired direction.

SPECIAL NEED AREAS

Recommendation 75:

That public health personnel should give leadership in determining the needs of these groups with a view to a judicious allocation of resources in relation to anticipated health effects. That the programs for the elderly, low income and other disadvantaged groups require increased emphasis and evaluation.

HEALTH CENTRES

If people are to take advantage of preventive services, it will be necessary for public health to achieve greater recognition by the community and to deliver programs and services as effectively as possible.

Recommendation 76:

That attractive community health centres be constructed which may in some instances be located adjacent to the community hospital.

Recommendation 77:

That these centres should be designed basically to house public health, mental health and voluntary health agency personnel.

Recommendation 78:

That health centres include an appropriate range of diagnostic facilities both for use in public health and by the physicians practising in the area.

Recommendation 79:

That consideration be given by government to subsidizing the costs of office accommodation for group practice by private physicians within these same community health centres.

Recommendation 80:

That programs of health centre construction be promoted in all provinces and that national health grants continue to be made available for this purpose.

LABORATORY SERVICES

It is evident that air and water pollution control will be a matter of increasing concern in the future and although this may be the responsibility of other agencies, the departments of health must still be kept well informed of any given situation and must continue to accept responsibility for protection of the public health.

In a venereal disease program, control is based primarily on the level of reporting by private physicians which, in turn, facilitates identification, examination and treatment of contacts. The role of the laboratory is vital in this context.

In certain provinces, the provincial laboratory provides a valuable clinical service to the small hospital and to the practising physicians and does so more economically and perhaps more reliably than can be done by the private laboratory.

Recommendation 81:

That provincial health laboratories be prepared to offer back-up support in relation to pollution control and that health departments be kept informed at all times of results and be prepared to develop standards to protect the health of the public in relation to water and air quality.

Recommendation 82:

That all specimens in conjunction with the venereal disease control program be tested in provincial laboratories only to ensure that reporting back to the medical health officer is obtained in all cases.

Recommendation 83:

That provincial laboratories offering service to the smaller hospital and to the practising physician in the more remote areas be encouraged to continue to do so.

VOLUNTARY HEALTH AGENCIES

It was agreed that their role will probably decrease in the delivery of service but that they would continue to play a part in community councils and in identifying gaps in service. Reduction in service is inevitable due to the increased government involvement in financing but at the same time their promotional and advisory functions are as essential as ever. The change in motivation of these agencies was noted whereby they sometimes tend to become vested interests.

Recommendation 84:

That since "single disease" oriented agencies tend to create duplication and fragmentation of service, their development should be discouraged.

Recommendation 85:

That government should only subsidize voluntary health agency service operations where these are integrated with the overall delivery of care, being non-duplicative and non-self-perpetuating and subject to annual budget review.

Recommendation 86:

That the role of these agencies is primarily to identify gaps in service. This involves a promotional function as exemplified in community planning councils and a research and demonstration activity.

PUBLIC HEALTH PRACTICE STATISTICS

These statistics are just not available in many provinces and it is not possible to assess adequately the public health practice while, without such statistics, effective evaluation of existing services and programs or of the cost of these programs is not possible. The following recommendations are intended to meet this need and in order that programs can be more effectively planned in such areas as maternal and child health, home care, chronic care, etc. for the future.

Recommendation 87:

That more meaningful and comparable public health practice statistics be made available.

Recommendation 88:

That demographic variables in the population with particular reference to age and sex composition and to fertility trends be determined.

Recommendation 89:

That statistics be made available to show the cost of public health services for the province as a whole and individual costs for each unit of service offered.

Recommendation 90:

That in due course public health records should be incorporated as part of an overall computer-linked information system.

HANDICAPPED CHILDREN AND ADULTS

It is in the interests of the individual and in the long run, of the country as a whole (for example to reduce the numbers of persons on welfare rolls) that information be available on the numbers of handicapped individuals in any given area within a province. Such information is also of value with respect to the training of handicapped children for suitable employment and in

order to keep track of handicapped individuals to make sure that they do not drop out of sight such as when moving from area to area or with respect to the follow-up of patients discharged from institutions. In the latter, every effort must be made to ensure maximum rehabilitation and return to gainful employment.

Recommendation 91:

That the health department in each province set up a registry for handicapped children and adults; that such a registry NOT be operated by a voluntary agency.

Recommendation 92:

That public health departments take steps to ensure that individuals "at risk" following discharge from institutions be adequately followed up.

USE OF PHYSICIAN-ASSOCIATE

It is generally agreed that nurses trained to diagnose and offer some therapy should be located in the more remote areas and work under the long-range guidance of a physician. On the other hand, where physicians' services are available in a community, then the concept of locating nurses as associates under the direct administration of a physician in private practice requires careful evaluation. The difference between the needs of a remote area and those of an established community should be recognized.

Recommendation 93:

That further study in the use of physician-associates is required and that such study should take into consideration the relationship between family physician and public health.

Appendix I is an extract from a full economic review undertaken by Dr. Eric Hanson. This appendix contains three chapters (sections C, D, and I) of this review which will be published in full at a later date. The task force is very grateful for the work done by Dr. Hanson.

SECTION C

ESTIMATED TOTAL EXPENDITURE
ON ALL HEALTH SERVICES
GOVERNMENT AND PRIVATE COMBINED
CANADA
1955 - 1968
BY MAJOR HEALTH FUNCTIONS
AND
SOURCES OF FUNDS

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MAY, 1969

SECTION C

ESTIMATED TOTAL EXPENDITURE ON ALL HEALTH SERVICES IN CANADA

This section provides estimates of expenditures on health services in Canada by governments, all other institutions, and individuals combined. In general, data are sketchy for the period before the 1950's, but we know that health expenditures by Canadians have increased at a very high rate during the past two decades. Fairly firm data are available from 1955 onward, and this section deals mainly with the period 1955-68.

Table C-1 shows the estimated total expenditure on health services and sanitation, including capital outlays, by Canadians for the years 1955, 1960, and 1965-68. During the decade 1955-65 the total increased from \$1.2 billion to \$3.0 billion, and there was a strong rise to an estimated \$4.4 billion in 1968. During the 13-year period 1955-68 there was almost a fourfold increase.

Table C-2 shows the proportions (percentages) spent on four major health functions. First, the expenditure on general and public health declined from 6 per cent to 5 per cent of the total expenditure on health between 1955-68. Thus about 95 per cent of all health expenditure is devoted to operational and curative aspects, in comparison with about 5 per cent for prevention, public health, education and training, and research.

Second, the expenditure on hospital care is about 55 per cent of the total, increasing from 53 per cent in 1955 to 56 per cent. Special studies of the economics of operations and benefit-cost aspects should

concentrate on hospital operations in the health sector in the first instance, for it is by far the largest.

Third, medical, dental, and allied services (medicare) accounted for about one-third of total health expenditures 1955-68. Again there is much scope for special studies of this large part of the health sector.

Fourth, sanitation and waste removal decreased from 8 per cent to 6 per cent of the total between 1955 and 1968.

Table C-3 shows the estimated health expenditures as percentages of GNP. Between 1955 and 1968 the total expenditure on the four major health services increased from 4.35 per cent to 6.60 per cent of the GNP, indicating an expanding allocation of the nation's growing resources to health services.

Table C-4 sets out the annual average rates of growth of expenditures on the four major health services. For the whole period 1955-68 the annual average rate of increase for all the services was 10.7 per cent, a rate of growth almost one and a half times the annual rate of growth of the GNP, which averaged 7.3 per cent. There was an acceleration in expenditures between 1965 and 1968, a period marked by high increases in wage and salary rates, and by the introduction of new programs such as Medicare and the Health Resources Fund.

In general, health expenditures have been increasing almost 50 per cent faster than the GNP. General and public health expenditures have increased markedly in recent years because of substantial rises in outlays by the Medical Research Council and the Health Resources Fund of the federal government to provide teaching and research facilities on an adequate scale in Canada. Hospital care expenditures have also increased at a very high rate in recent years, while outlays on

sanitation have increased at rates below the rate of increase of the GNP.

The three major health services, excluding sanitation, are labour-intensive, with from two-thirds to almost four-fifths of the total expenditure going to pay wages, salaries, fees, and fringe benefits. Sanitation offers more scope for automation than the other three services, and only about one-half of the expenditures are accounted for by labour costs. A major problem in dealing with most government expenditures is that they are so labour-intensive.

Table C-5 sets out the total expenditure on health on a per capita basis for the period 1955-1968. The total for all services increased from \$75 per capita in 1955 to an estimated \$214 per capita in 1968.

Table C-6 shows the annual average rates of increase in per capita terms.

Table C-7 shows total expenditure on health services by sources of the funds financing the outlays. The federal government expenditure grew more than eight-fold 1955-68 from an estimated \$103 million to an estimated \$865 million. The provincial government contribution increased sevenfold from an estimated \$271 million in 1955 to an estimated \$1,875 million in 1968. The municipal government expenditure grew only about twofold from an estimated \$161 million to an estimated \$335 million 1955-68, and most of the municipal expenditure was for sanitation and waste removal.

The combined expenditure of provincial-municipal governments increased about fivefold, from an estimated \$432 million in 1955 to an estimated \$2,210 million in 1968. The total expenditure of all three levels of government increased almost sixfold

from an estimated \$535 million in 1955 to an estimated \$3,075 million in 1968.

Other sources of funds providing for health expenditures consist of purchases by individuals, donations, investment income of hospitals, contributed services, and so forth. Private funds more than doubled from an estimated \$646 million in 1955 to an estimated \$1,370 million in 1968. Most of the private expenditures were made to purchase medical care, dental care, other health care, and drugs.

Table C-8 shows the proportions (percentages) contributed by each source. The federal government expenditure grew from an estimated 9 per cent of the total in 1955 to an estimated 19 per cent in 1968. The provincial government contribution expanded from 23 to 42 per cent (estimated) 1955-68, making it the most important source of funds. The municipal government portion declined from 14 to 8 per cent (estimated) 1955-68. All other sources (private) accounted for an estimated 55 per cent of the total in 1955; this declined to an estimated 31 per cent in 1968 as all three levels of governments increased from an estimated 45 per cent in 1955 to an estimated 69 per cent in 1968. The combined provincial-municipal portion grew from an estimated 37 per cent in 1955 to an estimated 50 per cent in 1968.

Table C-9 sets out the expenditures by sources in terms of the GNP. The federal government expenditure grew from an estimated 0.38 per cent of the GNP in 1955 to an estimated 1.28 per cent in 1968. The provincial government expenditure increased from an estimated 1.00 per cent of the GNP in 1955 to an estimated 2.78 per cent in 1968. The municipal government expenditure declined from an estimated 0.59 per cent of the GNP in 1955 to an estimated 0.50 per cent in 1968. Most of this was for sanitation. All other sources provided an estimated

2.38 per cent of the GNP in 1955; this declined to an estimated 2.04 per cent in 1968. The contribution of all three levels of government grew from an estimated 1.97 per cent of the GNP in 1955 to an estimated 4.56 per cent in 1968. The combined provincial-municipal government contribution increased from an estimated 1.59 per cent of the GNP in 1955 to an estimated 3.28 per cent in 1968, representing a relative doubling of the contribution.

Table C-10 shows annual average rates of increase by sources of funds. For the whole period 1955-68 the federal government expenditure increased most rapidly at an estimated annual average rate of 17.7 per cent, followed by the provincial governments grew by only 5.8 per cent per year. The expenditure of all levels of government increased at the annual average rate of 14.4 per cent, and accelerated to an estimated 16.4 per cent per year for the period 1965-68. Other sources grew at the annual average rate of 6.0 per cent during the period 1955-68.

Table C-11 shows the per capita expenditure by levels of government and other sources.

Table C-12 sets out the annual average rates of increase per capita. For the whole period the yearly rate of growth for all sources per capita was 8.4 per cent, accelerating to 11.9 per cent 1965-68.

Table C-13 shows the total expenditure on general and public health services for the period 1955-68. Governments accounted for all the expenditure on this function which is in the nature of a pure public good. All three levels of government participated in the provision of general and public health services, with the federal government making the greatest effort. Table C-13 also shows the expenditure on sanitation and waste

removal. This is another almost pure public good, provided mainly by governments. The data show the municipal governments as the chief provider of sanitation services, with some federal contributions.

Table C-14 shows the proportions (percentages) spent by the three levels of government on general and public health. During the period 1955-68 the federal expenditure increased from an estimated 43 per cent of the total to an estimated 57 per cent. The provincial expenditure increased from an estimated 32 per cent of the total in 1955 to an estimated 46 per cent in 1965, and then decreased to 34 per cent because of the very large federal increases for research grants and facilities for training and education (Health Resources Fund). The municipal expenditure declined from an estimated 25 per cent of the total in 1955 to an estimated 9 per cent in 1968.

Table C-15 shows estimated total expenditures on hospital care by categories of hospitals, including capital expenditure estimates. The total expenditure for all hospitals (active treatment, mental, tuberculosis, and federal) increased about fourfold 1955-68, from an estimated \$623 million in 1955 to an estimated \$2,510 million in 1968.

Table C-16 shows the sources of funds for expenditures on hospital care. The federal government contribution increased almost thirteenfold, the provincial government more than sevenfold, while the municipal failed to double itself 1955-68. The contribution from other sources declined during the period.

Table C-17 shows the proportions (percentages) contributed by governments and other sources to finance hospital care. The federal government contribution grew from an estimated 8 per cent in 1955 to an estimated

26 per cent in 1968. The provincial government contribution increased from an estimated 37 per cent to 67 per cent 1955-68, and the municipal contribution declined from an estimated 5 per cent to 2 per cent. The total contribution by all levels of government increased from an estimated 50 per cent in 1955 to an estimated 95 per cent in 1968, while other sources decreased from 50 per cent to 5 per cent during the period.

Table C-18 sets out estimates of expenditures on medical, dental, and allied services, including physicians' services, dentists' services, prescribed drugs, and other services such as private duty nurses, chiropractors, and osteopaths. The total expenditure increased by 270 per cent between 1955 and 1968, from an estimated \$390 million in 1955 to an estimated \$1,450 million in 1968.

Table C-19 shows the estimated total expenditures on all the above services (medicare) by sources. The federal government provided small amounts until 1968 when \$35 million was appropriated to medicare. The provincial contributions were also modest until 1968. Saskatchewan has provided provincial medicare since 1962, and British Columbia came in 1968. The municipal contribution was small throughout the period, and changed little during the years.

Table C-20 sets out the proportions (percentage) contributed to medicare by sources. The federal government contribution was an estimated 5 per cent in 1955, and it was also an estimated 5 per cent in 1968. The provincial government contribution grew from an estimated 1 per cent in 1955 to an estimated 9 per cent in 1968. The municipal government contribution declined from an estimated 4 per cent in 1955 to an estimated 1 per cent in 1968. The relative contribution of all governments did not change significantly during the period,

increasing from an estimated 13 per cent in 1955 to an estimated 14 per cent. Medicare is the main component of health expenditures to be financed by governments.

The contribution of all other sources decreased from an estimated 87 per cent of the total expenditure on medicare in 1955 to an estimated 86 per cent in 1968.

TABLE C-1

ESTIMATED TOTAL EXPENDITURE ^(a)
 ALL HEALTH SERVICES AND SANITATION
 BY MAJOR HEALTH FUNCTIONS
 SELECTED YEARS, 1955-1968
 IN MILLIONS OF DOLLARS

FUNCTIONS	1955	1960	1965	1966	1967	1968
General and Public Health Services(b)	72	105	138	158	196	227
Hospital Services(c)	623	966	1,617	1,875	2,230	2,510
Medical, Dental, and Allied Services(d)	390	680	1,044	1,165	1,300	1,450
Total Health Services	1,085	1,751	2,799	3,198	3,726	4,187
Sanitation and Waste Removal(e)	96	142	209	238	248	258
Total Including Sanitation	1,181	1,893	3,008	3,436	3,974	4,445

(a) Operating and capital, both government and private.

(b) Includes administration, vital and health statistics, personnel training, provincial sanitation services, TB control, mental health (excluding hospital care), public health nursing, laboratory services, alcoholic research foundations, public health research, advisory services, patent medicine acts, opium and narcotics drugs acts, cancer control, inspection of foods and drugs, control of communicable diseases, provision of research and health personnel training facilities (Health Resources Fund), medical research and education (Medical Research Council), and many other activities rendered on a public basis.

(c) General and special hospitals, mental hospitals, quarantine hospitals, immigration hospitals, and sick mariners' hospitals, and other hospitals.

(d) Physicians' services, dentists' services, nursing services, pharmaceuticals, and other health services (excluding hospital care) rendered to individuals.

(e) Sanitary sewers, storm sewers, sewage treatment and disposal, street cleaning, garbage collections, garbage disposal, comfort stations, etc.

SOURCES: Subsequent tables.

TABLE C-2

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY MAJOR HEALTH FUNCTIONS
CANADA, SELECTED YEARS 1955-1969
PER CENT OF TOTAL EXPENDITURE

FUNCTIONS	1955	1960	1965	1966	1967	1969
<u>Total Health Service</u>						
General and Public Health	7	6	5	5	5	5
Hospital Care	57	55	58	59	60	60
Medical, Dental, and Allied Services	36	39	37	36	35	35
TOTAL	100	100	100	100	100	100
<u>Total Health Services And Sanitation</u>						
General and Public Health	6	6	5	5	5	5
Hospital Care	53	51	54	55	56	56
Medical, Dental, and Allied Services	33	36	35	34	33	33
Sanitation and Waste Removal	8	7	7	7	6	6
TOTAL	100	100	100	100	100	100

SOURCE: Calculated from data in Table C-1. Failure of any totals to equal 100 is due to rounding off. This is the case for all subsequent tables where calculations have been rounded off to the nearest whole number or decimal.

TABLE C-3

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY MAJOR HEALTH SERVICES
CANADA, SELECTED YEARS 1955-1968
PERCENTAGES OF GROSS NATIONAL PRODUCT (GNE)

FUNCTIONS	1955	1960	1965	1966	1967	1968
General and Public Health Services	0.27	0.29	0.26	0.27	0.32	0.34
Hospital Services	2.30	2.66	3.10	3.23	3.59	3.73
Medical, Dental, and Allied Services	1.44	1.87	2.00	2.00	2.09	2.15
Total Health Services	4.00	4.83	5.36	5.50	6.00	6.22
Sanitation and Waste Removal	0.35	0.39	0.40	0.41	0.40	0.38
Total Including Sanitation	4.35	5.22	5.76	5.91	6.40	6.60

SOURCES: Calculated from data in Table C-1 and Table A-1 (GNP and GNE in current dollars).

TABLE C-4

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY MAJOR HEALTH FUNCTIONS
CANADA, SELECTED PERIODS
ANNUAL AVERAGE RATES OF INCREASE

FUNCTIONS	1955-68 Annual	1960-68 Annual	1965-68 Annual
	%	%	%
General and Public Health Services	9.2	10.1	18.0
Hospital Services	11.3	12.7	15.8
Medical, Dental, and Allied Services	10.6	10.0	11.4
Total Health Services	11.0	11.6	14.4
Sanitation and Waste Removal	8.0	7.7	7.1
Total Including Sanitation	10.7	11.3	13.9
GROSS NATIONAL PRODUCT (current dollars)	7.3	8.0	8.9

SOURCES: Calculated from data in Tables A-1 (GNP) and C-1 (health data), and by the use of compound interest tables.

TABLE C-5

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY MAJOR HEALTH FUNCTIONS
CANADA, SELECTED YEARS 1955-1968
DOLLARS PER CAPITA

FUNCTIONS	1955	1960	1965	1968
General and Public Health Services	\$ 4.60	\$ 5.90	\$ 7.05	\$ 10.95
Hospital Services	39.70	54.05	82.30	121.00
Medical, Dental, and Allied Services	24.85	38.05	53.15	69.90
Total Health Services	\$69.15	\$98.00	\$142.50	\$201.85
Sanitation and Waste Removal	6.10	7.95	10.65	12.45
Total Including Sanitation	\$75.25	\$105.95	\$153.15	\$214.30

SOURCES: Calculated from data in Table A-1 (population) and Table C-1 (health data).

TABLE C-6

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY MAJOR HEALTH FUNCTIONS
CANADA, SELECTED PERIODS, 1955-68
DOLLARS PER CAPITA
ANNUAL AVERAGE RATES OF INCREASE

FUNCTIONS	1955-68 Annual	1960-68 Annual	1965-68 Annual
	%	%	%
General and Public Health Services	6.9	8.0	15.8
Hospital Services	9.0	10.6	13.7
Medical, Dental, and Allied Services	8.3	7.9	9.6
Total Health Services	8.6	9.4	12.3
Sanitation and Waste Removal	5.6	5.8	5.3
Total Including Sanitation	8.4	9.1	11.9
G.N.P. Per Capita	5.0	6.0	7.0
G.N.P. Per Employed Worker	4.6	5.0	5.7

SOURCES: Calculated from data in Table A-10 (GNP per capita and per employed worker), and in Table C-5 (health data), using compound interest tables.

TABLE C-7

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY SOURCES OF FUNDS
CANADA, SELECTED YEARS, 1955-1968
IN MILLIONS OF DOLLARS

SOURCE	1955	1960	1965	1966	1967	1968
<u>Health Services</u>						
Federal Government	103	324	476	566	694	836
Provincial Governments	271	545	1,132	1,382	1,670	1,830
Municipal Governments	65	66	73	70	75	78
Total Governments	439	935	1,681	2,018	2,439	2,744
Other Sources (a)	646	816	1,061	1,180	1,287	1,370
TOTAL	1,085	1,751	2,742	3,198	3,726	4,114
Provincial-Municipal Governments	336	611	1,205	1,452	1,745	1,908
<u>Health Services and Sanitation</u>						
Federal Government	103	324	543	583	697	865
Provincial Governments	271	545	1,132	1,368	1,670	1,875
Municipal Governments	161	208	272	305	320	335
Total Governments	535	1,077	1,947	2,256	2,687	3,075
Other Sources (a)	646	816	1,061	1,180	1,287	1,370
TOTAL	1,181	1,893	3,008	3,436	3,974	4,445
Provincial-Municipal Governments	432	753	1,404	1,673	1,990	2,210

(a) Expenditure by individuals through private purchases, donations, investment income, contributed services, etc.

SOURCES: Subsequent tables.

TABLE C-8

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY SOURCES OF FUNDS
CANADA, SELECTED YEARS 1955-68
PER CENT OF TOTALS

SOURCE	1955	1960	1965	1966	1967	1968
<u>Health Services</u>						
Federal Government	9	19	17	18	19	20
Provincial Governments	25	31	41	43	45	45
Municipal Governments	6	4	3	2	2	2
Total Governments	40	53	61	63	66	67
Other Sources	60	47	38	37	35	33
TOTAL	100	100	99	100	101	100
Provincial-Municipal Governments	31	35	44	45	47	47
<u>Health Services and Sanitation</u>						
Federal Government	9	17	18	17	18	19
Provincial Governments	23	29	38	40	42	42
Municipal Governments	14	11	9	9	8	8
Total Governments	45	57	65	66	68	69
Other Sources	55	43	35	34	32	31
TOTAL	100	100	100	100	100	100
Provincial-Municipal Governments	37	40	47	49	50	50

SOURCE: Calculated from data in Table C-7.

TABLE C-9

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY SOURCES OF FUNDS
CANADA, SELECTED YEARS, 1955-68
PER CENT OF G.N.P. (G.N.E.)

SOURCE	1955	1960	1965	1966	1967	1968
<u>Health Services</u>						
Federal Government	0.38	0.89	1.02	0.99	1.11	1.27
Provincial Governments	1.00	1.50	2.17	2.35	2.69	2.78
Municipal Governments	0.24	0.18	0.14	0.13	0.13	0.13
Total Governments	1.62	2.58	3.33	3.47	3.93	4.18
Other Sources	2.38	2.25	2.03	2.03	2.07	2.04
TOTAL	4.00	4.83	5.36	5.50	6.00	6.22
Provincial-Municipal Governments	1.24	1.68	2.31	2.48	2.82	2.91
<u>Health Services and Sanitation</u>						
Federal Government	0.38	0.89	1.04	1.00	1.12	1.28
Provincial Governments	1.00	1.50	2.17	2.35	2.69	2.78
Municipal Governments	0.59	0.57	0.52	0.52	0.52	0.50
Total Governments	1.97	2.97	3.73	3.88	4.33	4.56
Other Sources	2.38	2.25	2.03	2.03	2.07	2.04
TOTAL	4.35	5.22	5.76	5.91	6.40	6.60
Provincial-Municipal Governments	1.59	2.07	2.69	2.88	3.20	3.28

SOURCES: Calculated from data in Table A-1
(GNP in current dollars) and in Table C-7.

TABLE C-10

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY SOURCES OF FUNDS
CANADA, SELECTED YEARS, 1955-68
ANNUAL AVERAGE PERCENTAGE INCREASES

SOURCE	1955-58 Annual	1960-68 Annual	1965-68 Annual
	%	%	%
<u>Health Services</u>			
Federal Government	17.7	13.0	17.0
Provincial Governments	16.0	16.7	18.3
Municipal Governments	2.1	3.4	5.2
Total Governments	15.4	14.8	17.5
Other Sources	6.0	6.7	8.9
TOTAL	11.0	11.6	14.4
Provincial-Municipal Governments	14.6	15.7	17.5
<u>Health Services and Sanitation</u>			
Federal Government	17.7	13.1	16.8
Provincial Governments	16.0	16.7	18.3
Municipal Governments	5.8	6.1	7.2
Total Governments	14.4	14.0	16.4
Other Sources	6.0	6.7	8.9
TOTAL	10.7	11.3	13.9
Provincial-Municipal Governments	13.4	14.4	16.3

SOURCES: Calculated from data in Table C-7 using compound interest tables.

TABLE C-11

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY SOURCES OF FUNDS
CANADA, SELECTED YEARS, 1955-68
DOLLARS PER CAPITA

SOURCE	1955	1960	1965	1968
<u>Health Services</u>				
Federal Government	\$ 6.55	\$ 18.15	\$ 27.15	\$ 41.30
Provincial Governments	17.25	30.50	57.65	90.40
Municipal Governments	4.15	3.70	3.70	4.10
Total Governments	\$27.95	\$ 52.35	\$ 88.50	\$135.80
Other Sources	41.20	45.65	54.00	66.05
TOTAL	\$69.15	\$ 98.00	\$142.50	\$201.85
Provincial-Municipal Governments	\$21.40	\$ 34.20	\$61.35	\$ 94.50
<u>Health Services and Sanitation</u>				
Federal Government	\$ 6.55	\$ 18.15	\$ 27.65	\$ 41.70
Provincial Governments	17.25	30.50	57.65	90.40
Municipal Governments	10.20	11.65	13.85	16.15
Total Governments	\$34.00	\$ 60.30	\$ 99.15	\$148.25
Other Sources	41.20	45.65	54.00	66.05
TOTAL	\$75.20	\$105.95	\$153.15	\$214.30
Provincial-Municipal Governments	\$27.50	\$ 42.15	\$ 71.50	\$106.55

SOURCES: Calculated from data in Table A-1 (population) and Table C-7 (health data).

TABLE C-12

ESTIMATED TOTAL EXPENDITURE
ALL HEALTH SERVICES AND SANITATION
BY SOURCES OF FUNDS
DOLLARS PER CAPITA
CANADA, SELECTED PERIODS, 1955-1968
ANNUAL AVERAGE PERCENTAGE GROWTH

SOURCE	1955-58	1960-68	1965-68
<u>Health Services</u>			
Federal Government	15.2	10.9	15.0
Provincial Governments	13.6	14.5	16.1
Municipal Governments	-0.1	1.3	3.5
Total Governments	12.9	12.7	15.3
Other Sources	3.7	4.7	7.0
TOTAL	8.6	9.4	12.3
Provincial-Municipal Governments	12.1	13.5	15.5
<u>Health Services and Sanitation</u>			
Federal Government	15.3	11.0	14.6
Provincial Governments	13.6	14.5	16.1
Municipal Governments	3.6	4.2	5.2
Total Governments	12.0	11.9	14.3
Other Sources	3.7	4.7	7.0
TOTAL	8.4	9.1	11.9
Provincial-Municipal Governments	11.0	12.3	14.2

TABLE C-13

ESTIMATED TOTAL EXPENDITURE
GENERAL AND PUBLIC HEALTH SERVICES AND
SANITATION AND WASTE REMOVAL
CANADA
SELECTED YEARS, 1955-1968
IN MILLIONS OF DOLLARS

	1955	1960	1965	1966	1967	1968
<u>General and Public Health Services</u>						
Federal Government (a)	31	44	57	74	106	130
Provincial Governments (b)	23	41	63	66	70	76
Municipal Governments	18	20	18	18	20	21
Total All Governments	72	105	138	158	196	227
Provincial- Municipal Governments	41	61	81	84	90	97
<u>Sanitation and Waste Removal</u>						
Municipal Governments (c)	96	142	199	230	240	250
Federal Government (a)	-	0	10	8	8	8
TOTAL	96	142	209	238	248	258

(a) From data in Section E.

(b) From data in Section G.

(c) From data in Section H.

TABLE C-14

ESTIMATED TOTAL EXPENDITURE
GENERAL AND PUBLIC HEALTH SERVICES
CANADA
SELECTED YEARS, 1955-68
PER CENT OF TOTALS

	1955	1960	1965	1968
Federal Government	43	42	41	57
Provincial Governments	32	39	46	34
Municipal Governments	25	19	13	9
TOTAL	100	100	100	100
Provincial-Municipal Governments	57	58	59	43

SOURCE: Calculated from data in Table C-13.

TABLE C-15

ESTIMATED TOTAL EXPENDITURE ON
HOSPITAL SERVICES
CANADA
SELECTED YEARS, 1955-1968
IN MILLIONS OF DOLLARS

HOSPITAL TYPES	1955	1960	1965	1966	1967	1968
<u>Operating Expenditures (a)</u>						
Active Treatment (b)	342	625	1,126	1,301		
Mental (c)	69	120	211	242		
Tuberculosis (c)	30	30	26	26		
Federal	39	54	80	82		
TOTAL	480	829	1,442	1,651	1,970 (e)	2,220 (e)
<u>Capital Expenditures (d)</u>	133	137	175	224	260 (e)	290 (e)
Total Expenditure	623	966	1,617	1,875	2,230	2,510

- (a) Data from Research and Statistics Directorate, Department of National Health and Welfare. (See J. Osborne, Table 8, of material handed out to committee.)
- (b) Excludes expenditures on general and public health, and capital expenditures. Excludes hospitals of the Department of National Defence before 1961.
- (c) Excludes federal hospitals.
- (d) New construction only. Maintenance and repair expenditures included under operating expenditures. Data from Department of Trade and Commerce, Government of Canada, and the DBS, and J.D. Pattison, Imperial Oil Limited.
- (e) Totals estimated.

TABLE C-16

ESTIMATED TOTAL EXPENDITURE ON HOSPITAL CARE
BY SERVICES OF FUNDS
CANADA
SELECTED YEARS, 1955-1968
IN MILLIONS OF DOLLARS

SOURCE	1955	1960	1965	1966	1967	1968
Federal Government (a)	52	255	448	472	550	659
Provincial Governments (b)	231	477	997	1,219	1,505	1,672
Municipal Governments (c)	32	36	46	48	50	53
Total All Governments	315	768	1,491	1,739	2,105	2,384
Other Sources (d)	308	198	126	136	125	126
Total Expenditure	623	966	1,617	1,875	2,230	2,510
Provincial-Municipal Governments	263	513	1,043	1,267	1,555	1,725

(a) Data from Section E.

(b) Data from Section G.

(c) Data from Section H.

(d) Residual consisting of private payments for services, donations, investment income, contributed services, etc.

TABLE C-17

ESTIMATED TOTAL EXPENDITURE ON HOSPITAL CARE
BY SOURCES OF FUNDS
CANADA
SELECTED YEARS, 1955-1968
PER CENT OF TOTALS

SOURCE	1955	1960	1965	1968
Federal Government	8	26	28	26
Provincial Governments	37	49	62	67
Municipal Governments	5	4	3	2
Total Governments	50	79	92	95
Other Sources	50	21	8	5
TOTAL	100	100	100	100
Provincial-Municipal Governments	42	53	65	69

SOURCE: Calculated from data in Table C-16.

TABLE C-18

ESTIMATED EXPENDITURE ON MEDICAL,
DENTAL, AND ALLIED SERVICES
CANADA
SELECTED YEARS, 1955-1968
IN MILLIONS OF DOLLARS

	1955	1960	1965	1966	1967	1968
Physicians' Services	206	355	545	605		
Prescribed Drugs ^(a)	60	110	170	190		
Dentists' Services	69	110	160	177		
Other ^(b)	55	105	169	193		
TOTAL	390	680	1,044	1,165	1,300 ^(c)	1,450 ^(c)

(a) Sold by retail pharmacies only.

(b) Estimated expenditures for services of private duty nurses, and chiropractors, osteopaths, and optometrists; excludes all employees of hospitals.

(c) Estimated by writer.

SOURCE: For data to 1966 inclusive, Table 8 of statistical compilation of J. Osborne, Research and Statistics Directorate, Department of National Health and Welfare.

TABLE C-19

ESTIMATED TOTAL EXPENDITURE
MEDICAL, DENTAL, AND ALLIED SERVICES
BY SOURCES OF FUNDS
CANADA
SELECTED YEARS, 1955-1968
IN MILLIONS OF DOLLARS

SOURCE	1955	1960	1965	1966	1967	1968
Federal Government ^(a)	20	25	28	29	33	68
Provincial Governments ^(b)	17	27	72	83	95	127
Municipal Governments ^(c)	15	10	9	9	10	11
Total All Governments	52	62	109	121	138	206
Other Sources ^(d)	338	618	935	1,044	1,162	1,244
Total Expenditure	390	680	1,044	1,165	1,300	1,450
Provincial-Municipal Governments	32	37	81	92	105	138

(a) Data from Section E.

(b) Data from Section G.

(c) Data from Section H.

(d) Residual consisting of private purchases, donations, contributed services, etc.

TABLE C-20

ESTIMATED TOTAL EXPENDITURE
MEDICAL, DENTAL, AND ALLIED SERVICES
BY SOURCES OF FUNDS
CANADA
SELECTED YEARS, 1955-1968
PER CENT OF TOTALS

SOURCE	1955	1960	1965	1968
Federal Government	5	4	3	5
Provincial Governments	4	4	7	9
Municipal Governments	4	1	1	1
Total Governments	13	9	10	14
Other Sources	87	91	90	86
Total Expenditure	100	100	100	100
Provincial-Municipal Governments	8	5	8	10

SOURCE: Calculated from data in Table C-19.

SECTION D
ESTIMATED NET GENERAL EXPENDITURE
ON ALL HEALTH SERVICES AND RELATED DATA
ALL GOVERNMENTS IN CANADA
1949-1968
BY MAJOR HEALTH FUNCTIONS
AND
SOURCES OF FUNDS BY LEVEL OF GOVERNMENT

SECTION D

ESTIMATED NET GENERAL EXPENDITURE ON ALL HEALTH SERVICES AND RELATED DATA: ALL GOVERNMENTS IN CANADA, 1949-1968

This section concentrates on the combined contributions and expenditures of all three levels of government in Canada in the health services field. Private and non-government expenditures have been shown in Section C, and they are excluded here.

Table D-1 shows yearly data for the period 1949-68 of the expenditures of all governments on the four major health categories. During the period 1949-68 the annual average rates of increase were an estimated 10.3 per cent for general and public health, 10.3 per cent for medical, dental, and allied services, 14.1 per cent for hospital care, 12.0 per cent for sanitation, and 13.1 per cent for the total expenditure on health services.

Table D-2 shows the proportions (percentages) spent on each major health category by all governments. The expenditure on general and public health declined from an estimated 12 per cent to an estimated 7 per cent between 1949 and 1968. Similarly, the expenditure on medical and other health care decreased from 11 to 7 per cent of the total. The expenditure on hospital care grew from an estimated 67 per cent of the total in 1949 to an estimated 78 per cent in 1968, indicating the overwhelming importance of this item in government expenditures on health. The expenditure on sanitation decreased from 10 to 8 per cent of the total between 1949 and 1968.

Table D-3 shows the health expenditures as percentages of total government expenditures of all governments. The expenditure on general and public health remained close to 1 per cent of all total government expenditures during the twenty-year period. The expenditure

on medical and other health care varied from 0.6 to 0.9 per cent of total government expenditures 1949-68. The expenditure on hospital care increased substantially from an estimated 5.2 per cent in 1949 to an estimated 10.1 per cent in 1968. The expenditure on sanitation rose from 0.8 to 1.1 per cent. The total expenditure on all health services increased from 7.7 to 13.0 per cent (estimated) of the total expenditures of all governments 1949-68.

Table D-4 sets out current and constant dollar estimates of the total health expenditures of all governments. Table D-5 shows annual average rates of increase in health expenditures per capita by all governments in terms of constant dollars. During the period 1949-68 the total expenditure on health services, including sanitation, by governments, on a per capita constant dollar basis, increased at an annual average rate of 6.0 per cent, and accelerated to 8.0 per cent for the period 1965-68. By comparison, total expenditure per capita on all functions by all governments averaged an increase of 3.8 per cent per year 1949-68, and accelerated to 6.5 per cent 1965-68. The G.N.P. per capita in constant dollars grew at an annual average rate of 2.3 per cent 1949-68, and accelerated to 2.9 per cent for the period 1965-68. The implicit price index for the G.N.P. (GNE) increased at an average yearly rate of 2.9 per cent 1949-68, and increased 3.9 per cent per year during the period 1965-68.

Finally, the implicit price index of government expenditure on goods and services increased at an annual average rate of 4.4 per cent during the period 1949-68. This is a much higher rate than for other price indexes. The main reason is that the index contains a high component of wages and salaries in the public sector. The rise in the index accelerated to a yearly average of 5.8 per cent 1965-68. An index for hospital expenditures would likely show even greater increases because of the high labour-intensity of hospital operations.

In general, total government expenditures, including health services, increased markedly during the 1965-68 period.

Table D-6 shows the expenditures on health services by level of government. The federal government expenditure increased from an estimated 24 per cent to an estimated 28 per cent of the total between 1949 and 1968. The provincial government expenditure rose from an estimated 53 per cent to an estimated 61 per cent of the total 1949-68. Finally, the municipal government expenditure declined from an estimated 23 per cent in 1949 to an estimated 11 per cent; this level of government is phasing out of a number of health service activities, especially as to financial contributions. The municipal governments are more important administratively than financially.

Finally, Table D-7 shows the total expenditures of all governments on all functions by level of government. The total expenditure on all functions by the federal government decreased from 61 per cent to 48 per cent of the total 1949-68, indicating a strong upward trend in provincial spending. The total expenditure on all functions by the provincial government increased from 23 per cent in 1949 to an estimated 36 per cent in 1968. The municipal proportion grew little from 16 to 17 per cent between 1949 and 1968.

The total expenditure of all governments on all functions increased from 23.1 per cent in 1949 to 30.9 per cent in 1965, and to an estimated high of 35.1 per cent in 1968. During the whole period 1949-68 the annual average rate of increase of total government expenditure was 10.1 per cent, accelerating to 13.5 per cent for 1965-68. By way of comparison, health expenditures of all governments increased at an annual average rate of 13.1 per cent, or 30 per cent faster than total government spending, during the period 1949-68.

TABLE D-1
ESTIMATED NET GENERAL EXPENDITURE
BY MAJOR HEALTH FUNCTIONS
ALL GOVERNMENTS IN CANADA
1949-1968
IN MILLIONS OF DOLLARS

	GENERAL AND PUBLIC HEALTH	MEDICAL, DENTAL, AND ALLIED SERVICES	HOSPITAL CARE	TOTAL, EXCLUD- ING SANITATION	SANITATION AND WASTE REMOVAL	TOTAL INCLUD- ING SANITA- TION
1949	35	32	195	262	30	292
1950	39	35	210	284	35	319
1951	46	36	231	313	40	353
1952	53	43	252	348	49	397
1953	59	44	271	374	64	438
1954	66	50	306	422	130	552
1955	72	52	315	439	96	535
1956	79	58	333	470	117	587
1957	86	62	383	531	117	648
1958	94	64	466	624	117	741
1959	99	61	659	819	134	953
1960	105	62	768	935	142	1,077
1961	104	60	960	1,124	179	1,303
1962	109	68	1,072	1,249	179	1,428
1963	136	93	1,107	1,336	189	1,525
1964	138	99	1,289	1,526	198	1,724
1965	138	109	1,491	1,738	209	1,947
1966 (a)	158	121	1,739	2,018	238	2,256
1967 (a)	196	138	2,105	2,439	248	2,687
1968 (a)	227	206	2,384	2,817	258	3,075
ANNUAL AVERAGE PERCENTAGE INCREASES						
1949-58	10.3	10.3	14.1	13.2	12.0	13.1

(a) Preliminary estimates.

SOURCES: Tables in subsequent sections.

TABLE D-2

ESTIMATED NET GENERAL EXPENDITURE
BY MAJOR HEALTH FUNCTIONS
ALL GOVERNMENTS IN CANADA
SELECTED YEARS, 1949-1968
PER CENT OF TOTALS

FUNCTIONS	1949	1955	1960	1965	1968
	%	%	%	%	%
<u>Health Services</u>					
General and Public Health	13	16	11	8	8
Medical, Dental, and Allied Services	12	12	7	6	7
Hospital Care	75	72	82	86	85
TOTAL	100	100	100	100	100
<u>Health Services and Sanitation</u>					
General and Public Health	12	13	10	7	7
Medical, Dental, and Allied Services	11	10	6	6	7
Hospital Care	67	59	71	77	78
Sanitation and Waste Removal	10	18	13	11	8
Total Including Sanitation	100	100	100	100	100

SOURCE: Calculated from data in Table D-1.

TABLE D-3

ESTIMATED NET GENERAL EXPENDITURE
 BY MAJOR HEALTH FUNCTIONS
 ALL GOVERNMENTS IN CANADA
 SELECTED YEARS, 1949-1968
 PER CENT OF TOTAL GOVERNMENT EXPENDITURE

FUNCTIONS	1949	1955	1960	1965	1968
	%	%	%	%	%
General and Public Health	0.9	1.0	1.0	0.9	1.0
Medical, Dental, and Applied Services	0.8	0.7	0.6	0.7	0.9
Hospital Care	5.2	4.4	7.1	9.2	10.1
Total, Excluding Sanitation	6.9	6.1	8.6	10.8	11.9
Sanitation and Waste Removal	0.8	1.3	1.3	1.3	1.1
Total, Including Sanitation	7.7	7.5	9.9	12.1	13.0

SOURCES: Calculated from data in Tables D-1 and D-7.

TABLE D-4
ESTIMATED NET GENERAL EXPENDITURE
ALL HEALTH FUNCTIONS
ALL GOVERNMENTS IN CANADA
CURRENT AND CONSTANT DOLLARS
SELECTED YEARS, 1949-68

	1949	1955	1960	1965	1968
<u>In Millions of Current Dollars</u> ^(a)					
Total, Excluding Sanitation	262	439	935	1,738	2,817
Total, Including Sanitation	292	535	1,077	1,947	3,075
<u>In Millions of Constant Dollars</u> ^(b)					
Total, Excluding Sanitation	262	326	580	911	1,245
Total, Including Sanitation	292	398	668	1,020	1,359
<u>Per Capita in Current Dollars</u> ^(c)					
Total, Excluding Sanitation	19.50	27.95	52.35	88.50	135.80
Total, Including Sanitation	21.70	34.00	60.30	99.15	148.25
<u>Per Capita in Constant Dollars</u> ^(c)					
Total, Excluding Sanitation	19.50	20.75	32.45	46.40	60.00
Total, Including Sanitation	21.70	25.35	37.40	51.90	65.50
<u>Per Cent of GNP in</u>					
<u>Constant Dollars</u> ^(d)					
Total, Excluding Sanitation	1.60	1.49	2.24	2.69	3.20
Total, Including Sanitation	1.79	1.82	2.58	3.01	3.49

(a) Data from Table D-1.

(b) Constant 1949 dollars on basis of implicit price index for government goods and services shown in Table A-16.

(c) Calculated from data above and population figures in Table A-1.

(d) Calculated from data above and GNP constant dollar data in Table A-1. For current dollar comparison, see Table C-9.

TABLE D-5

HEALTH EXPENDITURE OF ALL GOVERNMENTS
PER CAPITA COMPARISONS
ANNUAL AVERAGE RATES OF INCREASE
SELECTED PERIODS, 1949-68

	1949-68 Annual	1955-68 Annual	1960-68 Annual	1965-68 Annual
	%	%	%	%
<u>Total Health Expenditures Per Capita in Constant Dollars</u> ^(a)				
Excluding Sanitation	6.1	8.5	8.0	9.0
Including Sanitation	6.0	7.6	7.3	8.0
Total Government Expenditure in Constant Dollars Per Capita ^(b)	3.8	3.5	3.7	6.5
G.N.P. Per Capita in Constant Dollars ^(c)	2.3	2.4	3.3	2.9
Implicit Price Index of G.N.P. (G.N.E.) ^(d)	2.9	2.6	2.7	3.9
Implicit Price Index of Government Expenditure on Goods and Services ^(d)	4.4	4.1	4.3	5.8

- (a) Calculated from data in Table D-4. For data on growth of current dollars per capita, see Table C-11.
- (b) Calculated from data in Tables B-5 and B-8 on the basis of 1967 as final year.
- (c) Data from Table A-10.
- (d) Data from Table A-16.

TABLE D-6
ESTIMATED NET GENERAL EXPENDITURE
BY LEVEL OF GOVERNMENT
ON ALL HEALTH SERVICES
ALL GOVERNMENTS IN CANADA
SELECTED YEARS, 1949-1968

	1949	1955	1960	1965	1968
<u>In Millions of Dollars</u>					
<u>Health Services</u>					
Federal Government	69	103	324	476	836
Provincial Governments	156	271	545	1,132	1,830
Municipal Governments	37	65	66	73	78
TOTAL	262	439	935	1,681	2,744
<u>Health Services and Sanitation</u>					
Federal Government	69	103	324	543	865
Provincial Governments	156	271	545	1,132	1,875
Municipal Governments	67	161	208	272	335
TOTAL	292	535	1,077	1,947	3,075
<u>Per Cent of Totals</u>					
Federal	26	23	35	31	30
Provincial	60	62	58	65	67
Municipal	14	15	7	4	3
Total Health Services	100	100	100	100	100
Federal	24	19	30	28	28
Provincial	53	51	51	58	61
Municipal	23	30	19	14	11
Total Including Sanitation	100	100	100	100	100

SOURCES: Various tables in subsequent sections. See also Table C-7.

TABLE D-7
TOTAL NET GENERAL EXPENDITURE
ON ALL FUNCTIONS
ALL GOVERNMENTS IN CANADA
SELECTED YEARS

	1949	1955	1960	1965	1968
					(a)
<u>In Millions of Dollars</u>					
Federal Government	2,301	4,315	5,870	8,022	11,264
Provincial Governments	862	1,539	2,800	5,087	8,425
Municipal Governments	619	1,301	2,181	3,046	3,940
Total All Governments	3,782	7,154	10,850	16,156	23,629
<u>Per Cent of Total</u>					
Federal Government	61	60	54	50	48
Provincial Governments	23	22	26	31	36
Municipal Governments	16	18	20	19	17
Total All Governments	100	100	100	100	100
<u>Per Cent of GNP</u>					
Federal Government	14.1	15.9	16.2	15.4	16.7
Provincial Governments	5.3	5.7	7.7	9.7	12.5
Municipal Governments	3.8	4.8	6.0	5.8	5.8
Total All Governments	23.1	26.4	29.9	30.9	35.1
<u>Annual Average Percentage Growth</u>					
		<u>1949-68</u>	<u>1955-68</u>	<u>1960-68</u>	<u>1965-68</u>
Federal Government		8.7	7.7	8.5	12.0
Provincial Governments		12.8	14.0	14.8	18.3
Municipal Governments		10.2	8.9	7.7	9.0
Total All Governments		10.1	9.6	10.2	13.5

(a) Estimated by the writer.

SOURCE: DBS, Governments Division and calculations from data in Tables A-1 and the source.

SECTION I

PROJECTIONS OF HEALTH EXPENDITURES
AND RELATED DATA
CANADA

SECTION I

PROJECTIONS OF HEALTH EXPENDITURES AND RELATED DATA

This section provides some projections to 1981 for health expenditures, population, the gross national product, government expenditures, and related data. The comments here are necessarily brief.

Table I-1 shows health expenditure data for 1955, estimates for 1968, and projections for 1981. During the period 1955-68 the total expenditure on general and public health services (all by governments) increased at an annual average rate of 9.2 per cent, rising from \$72 million to \$227 million. The expenditure on general and public health services declined from 6 to 5 per cent of the total expenditure on health services, public plus private. Less than half of the expenditure on general and public health is for administration and public health programs; the rest, a growing proportion excluding one-half is spent for research, teaching, and training purposes (MRC, Health Resources Fund, grants to provinces for research, etc.). A continuous expanding flow of funds will be required in the future to provide for the necessary administrative efficiency, prevention services, examination services, inspection services, research, and the teaching and education of personnel.

The projection for 1981 assumes an annual average rate of increase of 10 per cent per year in the expenditure on all aspects of general and public health services. This implies an expansion from an estimated \$227 million in 1968 to a projected \$785 million in 1981. The latter figure would be 5 per cent of the projected total expenditure on health, and 0.45 per cent of the projected GNP for 1981 (See Table I-2).

The total expenditure on hospital care, public plus private, increased from an estimated \$623 million in 1955 to an estimated \$2,510 million in 1968, at an annual average rate of increase of 11.3 per cent. For the period 1968-81 the inflationary pressure will be greater on the basis of the G.N.P. projections shown in Table I-5, than during the period 1955-68. The national hospital system of Canada, however, began to develop much below the saturation level in 1955, and it is now close to serving the total population. For 1968-81 the projected annual average rate of increase is 10 per cent, or somewhat below the 11.3 per cent of the 1955-68 period. This implies a rise in hospital care expenditures of every kind from an estimated \$2,510 million in 1968 to a projected \$8,665 million in 1981.

Hospital expenditure increased from 53 to 56 per cent of the total expenditure on health between 1955 and 1968; the projection allows for a slight rise to 57 per cent in 1981. In terms of the G.N.P. hospital care expenditures grew from an estimated 2.30 to an estimated 3.73 per cent 1955-68, and the projection implies an expansion to 4.95 per cent of the projected G.N.P. of \$175 billion (see Table I-5).

The total expenditure on medical, dental, and allied services, public plus private, increased from an estimated \$390 million in 1955 to an estimated \$1,450 million in 1968, at an annual average rate of 10.6 per cent. This rapid rate of expansion was induced in part by the great expansion of group insurance schemes, in part by the growth of the population, and in part by the substantial rise in incomes of Canadians. The effect of the introduction of universal medical care will be to bring into the orbit of the health sector the relatively small residual of uninsured people. This will call for further expansion. On the other hand, growing rationalization and planning of the system should produce some economies.

For the period 1968-81 the projected expansion of medical care expenditures is 10 per cent per year, with the total increasing from an estimated \$1,450 million in 1968 to a projected \$5,000 million in 1981. This implies that medical care expenditures will remain at 33 per cent of the total expenditure on health in 1981, as in 1968 and 1955 (see Table I-2). There would be an expansion from an estimated 2.15 per cent of the G.N.P. in 1968 to a projected 2.86 per cent of the G.N.P. in 1981.

On the basis of the above projections, the total expenditure on the three major categories of health services, excluding sanitation, which rose from \$1.1 billion to \$4.2 billion in 1955-68, would rise to nearly \$14½ billion by 1981, at an annual average rate of 10 per cent, to constitute 95 per cent of the total expenditure on health, and to equal 8.26 per cent of the projected G.N.P. (see Table I-2).

The expenditure on sanitation and waste removal increased from an estimated \$96 million to an estimated \$258 million between 1955 and 1968, at an annual average rate of 8.0 per cent. For the period 1968-81 the projected rate of increase is 9.0 per cent per year to take into account the making up of deficiencies in urban and other systems, and to allow for some antipollution measures. The projection does not, however, take into account special and growing antipollution programs of various kinds.

The expenditure on sanitation is projected to rise from an estimated \$258 million in 1968 to \$790 million in 1981. The expenditure on sanitation equalled 6 per cent of the total expenditure on health in 1968, and would decrease to 5 per cent in 1981. In terms of the G.N.P. it would rise from 0.38 per cent in 1968 to 0.45 per cent in 1981, or equivalent to the expenditure on general and public health.

Altogether the total expenditure on the four major categories of health services grew from \$1.2 billion in 1955 to \$4.4 billion in 1968, and it is projected to increase to \$15.2 billion in 1981, at an average annual rate of increase of 9.9 per cent. The total expenditure equalled an estimated 4.35 per cent of the G.N.P. in 1955 rising to an estimated 6.60 per cent in 1968. The projected total for 1981 of \$15.2 billion could be 8.7 per cent of the projected G.N.P. of \$175 billion (see Tables I-1 and I-2).

Tables I-3 and I-4 provide projections of the expenditure of all governments in Canada on health services. The total expenditure of all governments on the four categories of health services increased from an estimated \$535 million in 1955 to an estimated \$3,075 million in 1968. The projection for 1981 is \$14,075 million, leaving about \$1,165 million to be financed privately. It is assumed that governments would finance 100 per cent of general and public health services, 100 per cent of sanitation, 98 per cent of hospital care, and 80 per cent of medical care.

The projected annual average rate of increase of the total expenditure on health services is 12.4 per cent, implying a significant expansion of the public sector. Total government expenditure on health services was nearly 2.0 per cent of the G.N.P. in 1955, almost 4.6 per cent in 1968, and is projected to exceed 8.0 per cent in 1981. As a percentage of the total expenditure of all governments on all functions (see Table I-9 for projections), health services accounted for 7.3 per cent in 1955, 13.2 per cent in 1968, and are projected to reach 20 per cent in 1981.

The expenditure on general and public health remained at about 1.0 per cent of the total spending of all governments between 1955 and 1968. This proportion is expected to increase a little to 1.1 per cent in 1981.

Table I-5 provides projections of the population and G.N.P. of Canada. The population is projected to increase to 25.6 million at an annual average rate of 1.7 per cent 1966-81, compared to 2.4 per cent for the period 1951-66. The G.N.P. is projected to increase from \$58.1 billion in 1966 to \$175.0 billion in 1981, at an annual average rate of 7.6 per cent for 1966-81 compared to 7.0 per cent for 1951-66. The G.N.P. per capita is projected to increase at an annual average rate of 5.8 per cent 1966-81, compared to 4.4 per cent for 1951-66. One reason for the higher rate is that each worker in the labour force will support fewer people (i.e. smaller families and households) in the future. The general price level is projected to increase at an average annual rate of 3.0 per cent, with some deceleration during the period as the labour force increases at a higher than previous rate, productivity increases continue, and as the western countries learn more about the inflationary forces in the economy which can be translated into effective policies.

Table I-5 also provides constant dollar comparisons and projections.

Table I-6 sets out total labour force projections, and Table I-7 some detailed projections. The projections point to a future decline of employment in the goods industries, a further rise in female employment, and a decline in the number of persons supported per worker. Some projections of health personnel in the labour force are also set out. It is expected that the number of persons in the health sector will more than double during the period 1966-81. The totals are not all-inclusive, but suggestive of the potential expansion. About 97 to 98 per cent will continue to be engaged in the hospital care, medical care, research, and teaching services, and between 2 and 3 per cent in public health

services. The labour force estimate for health personnel exclude sanitation, waste removal, and antipollution personnel.

Of the projected 3,475,000 new jobs to be created during the period 1966-81, it is anticipated that 3,175,000, or more than nine out of ten of the new jobs will be in the service industries. This calls for much orientation and guidance of young people by personnel in the health, welfare, and education sectors. About one out of ten of the new jobs is expected to be in the health sector itself.

The rapid increases in productivity in the capital-intensive goods industries generate growing incomes which induce a rising demand for services, and a desired demand for labour. Insofar as the developed countries succeed in automating the labour-intensive industries, without affecting the quality and personal touch demanded, hours of work could be shortened considerably, and men released further from toil. There will, however, be a continuous competition among the groups within the economy for the additional gains, and competition for qualified workers. The end result is a continuous process of negotiations, agreements, and taxation debates in the field of public finance. We have seen this process for the past few decades, and can see only an intensification of the social debate about the expansion of the public sector in the future. It is the central issue, when all is said and done, in our society.

Table I-8 provides data on the expansion of government expenditures in Canada between 1951 and 1966. In terms of current dollars the annual average rate of growth during this period was 9.2 per cent, and there was an expansion from 23.5 to 32.2 per cent of the G.N.P. (The 1968 level of government expenditure is an estimated 35.1 per cent of the G.N.P.).

In terms of constant dollars the expansion of the public sector was much smaller, at the annual average rate of 5.9 per cent. The growth by reference to the G.N.P. in constant dollars was from 23.2 per cent to 28.2 per cent between 1951 and 1966. This is because the price index of government expenditure on goods and services contains a high proportion of wages and salaries, and it has increased much faster than the other price indexes.

Table I-9 sets out changes in price indexes for the period 1951-66, and provides projections to 1981. During the period 1951-66 the price index for durable goods in the consumer price index decreased slightly, the price index for non-durable goods increased at an annual average rate of 1.2 per cent, and the index for total commodities rose at an annual average rate of 0.9 per cent. The current inflationary trends are not in the commodities sector; they are in the labour-intensive sectors.

The price index for services in the consumer price index increased at the annual average rate of 3.0 per cent. This is where the inflation is occurring, as the demand for services increases and an increasing number of workers are hired. These workers have to be paid growing rates of remuneration which are equivalent to those earned by workers in goods industries. The total consumer price index increased at an annual average rate of 1.6 per cent during the period 1951-66.

The implicit price index for personal expenditure on consumer goods and services in the National Accounts grew at an annual average rate of 1.7 per cent 1951-66, very close to the rate for the consumer price index.

The price index for government expenditure on goods and services, however, increased at an annual average rate of 3.8 per cent during the period 1951-66.

The current expenditure component, which is very labour-intensive, increased at an annual average rate of 4.2 per cent, while the capital expenditure component, which is fairly capital-intensive, increased at an annual average rate of only 2.4 per cent.

The implicit price index for the whole G.N.P. (or gross national expenditure) increased at an annual average rate of 2.3 per cent.

The price index for the inputs of school systems has been rising at an annual average rate of 5 to 6 or more per cent because school systems are highly labour-intensive. Similarly, hospital care and medical care services require a high proportion of labour, and we estimate that the rise in the index for such services is in the order of 5 to 6 per cent per year. This means that any health or hospital budget has to increase by at least this amount yearly to continue to do last year's job. To this has to be added the increment for growth in the number of patients, new programs, and improvements in services. All this builds up to our projections increases of about 10 per cent per year in the years ahead for health services.

Table I-10 provides a suggested projection of total government expenditures to 1981 for all Canadian governments. We cannot go into details in the exposition here. The trends point to a continuation of the trends of the past, if the economy continues to grow and develop. (If we could stop our economic growth the public sector would also stop growing on a permanent basis, but would expand to help stabilize the economy). The data indicate a rise in expenditure from \$18.7 billion in 1966 to \$70.0 billion in 1981, or about 40 per cent of the G.N.P.

On the basis of the price index projections in Table I-9, however, the expansion in real terms would be small, while the tax load would be in the order of 40 per cent, the level of real services would be in the order of

30 per cent. We could expand at length on the whole question of the growth of the public sector. We have read the financial press for decades, and it continues to be alarmed by the same phenomenon continuously, and treasurers of government continue to be attacked all the time. It is not new at all. The public sector in the developed countries will continue to expand relatively, except possibly in the United States, where chaos and riots will be a matter of everyday experience instead of higher taxes. But even in the United States there is now an increasing realization that the public sector must be expanded to provide decent environments and adequate opportunities for all of its citizens.

As far as health services in Canada are concerned, governments have been working hard during the past two decades to provide adequate levels of care for all Canadians. This will continue in the future, and the data indicate that it will be a great and demanding task which the great majority of Canadians wish to see performed.

TABLE I-1

ESTIMATED AND PROJECTED TOTAL PUBLIC AND PRIVATE EXPENDITURE
HEALTH SERVICES AND SANITATION
BY MAJOR HEALTH FUNCTIONS
CANADA, 1955, 1968, AND 1981
IN MILLIONS OF DOLLARS

FUNCTIONS	1955	1968	1981	Annual Average Rate Of Increase, 1955-68	Annual Average Rate Of Increase, 1968-81
	(a)	(a)		%	%
General and Public Health Services	72	227	785 ^(b)	9.2	10.0
Hospital Care	623	2,510	8,665 ^(c)	11.3	10.0
Medical, Dental, and Allied Services	390	1,450	5,000 ^(d)	10.6	10.0
Total Health Services	1,085	4,187	14,450	11.0	10.0
Sanitation and Waste Removal	96	258	790	8.0	9.0
Total Including Sanitation	1,181	4,445	15,240	10.7	9.9
GNP In Millions Of Current \$	27,132	67,368	175,000 ^(e)	7.3	7.6

(a) From Table C-1

(b) Projected at a higher rate than 1955-68 because of Medical Research Council and Health Resources Fund allotments. Regular public health is expected to grow more modestly.

(c) Some deceleration is assumed.

(d) Acceleration and then saturation.

(e) See Table I-5.

TABLE I-2

ESTIMATED AND PROJECTED TOTAL PUBLIC AND PRIVATE EXPENDITURE
HEALTH SERVICES AND SANITATION
BY MAJOR HEALTH FUNCTIONS
CANADA, 1955, 1968, AND 1981
PERCENTAGE RELATIONSHIPS

	1955	1968	1981
<u>Per Cent of Total</u> ^(a)			
General and Public Health	6	5	5
Hospital Care	53	56	57
Medical, Dental & Allied Services	33	33	33
Total Health Services	92	94	95
Sanitation & Waste Removal	8	6	5
Total Including Sanitation	100	100	100
<u>Per Cent of GNP</u> ^(b)			
General and Public Health	0.27	0.34	0.45
Hospital Care	2.30	3.73	4.95
Medical, Dental & Allied Services	1.44	2.15	2.86
Total Health Services	4.00	6.22	8.26
Sanitation and Waste Removal	0.35	0.38	0.45
Total Including Sanitation	4.35	6.60	8.71

(a) Calculated from data in Table I-1.

(b) See Table I-1 for GNP.

TABLE I-3

TOTAL GENERAL EXPENDITURE
ALL GOVERNMENTS IN CANADA
HEALTH SERVICES AND SANITATION
ESTIMATES AND PROJECTIONS, 1955, 1968 AND 1981

	1955	1968	1981	Annual Average Rate of Increase, 1955-68	Annual Average Rate of Increase, 1968-81
				%	%
<u>In Millions of Dollars</u>					
General and Public Health	72	227	785	9.2	10.0
Hospital Care	315	2,384	8,500 ^(a)	16.9	10.2
Medical, Dental and Allied Services	52	206	4,000 ^(b)	11.2	25.6
Total Health Services	439	2,817	13,285	15.4	12.7
Sanitation and Waste Removal	96	258	790	8.0	9.0
Total Including Sanitation	535	3,075	14,075	14.4	12.4
<u>Per Cent of Total Public and Private Expenditure</u>					
General and Public Health	100	100	100		
Hospital Care	51	95	98		
Medical Care	13	14	80		
Total Health Services	40	67	92		
Sanitation and Waste Removal	100	100	100		
Total Including Sanitation	45	69	92		

(a) Assumed 98 per cent of total on hospital care.

(b) Assumed 80 per cent of total on medical care.

TABLE I-4

TOTAL GENERAL EXPENDITURE
ALL GOVERNMENTS IN CANADA

HEALTH SERVICES AND SANITATION

PERCENTAGE RELATIONSHIPS, 1955, 1968 and 1981

	1955	1968	1981
<u>Per Cent of Total</u>			
General and Public Health	13	7	6
Hospital Care	59	78	60
Medical, Dental and Allied Services	10	7	28
Total Health Services	82	92	94
Sanitation and Waste Removal	18	8	6
Total Including Sanitation	100	100	100
<u>Per Cent of GNP</u>			
General and Public Health	0.27	0.34	0.45
Hospital Care	1.16	3.54	4.86
Medical, Dental and Allied Services	0.19	0.31	2.29
Total Health Services	1.62	4.18	7.59
Sanitation and Waste Removal	0.35	0.38	0.45
Total Including Sanitation	1.97	4.56	8.04
<u>Per Cent of Total Government Expenditure</u>			
General and Public Health	1.0	1.0	1.1
Hospital Care	4.3	10.2	12.1
Medical, Dental and Allied Services	0.7	0.9	5.7
Total Health Services	6.0	12.1	19.0
Sanitation and Waste Removal	1.3	1.1	1.1
Total Including Sanitation	7.3	13.2	20.1

SOURCES: Calculated from other Tables.

POPULATION AND GNP, CANADA,
ACTUAL 1951 AND 1966; PROJECTIONS FOR 1981

	1951 (a)	1966 (a)	1981	Total Percentage Growth		Annual Average Percentage Growth	
				1951-66	1966-81	1951-66	1966-81
Population (000's)	14,009	20,015	25,600(b)	43	28	2.4	1.7
Total GNP (Millions of \$):							
Current \$	21,170	58,104	175,000	174	201	7.0	7.6
Constant (1949) \$	18,547	36,000	70,000	94	94	4.5	4.5(c)
GNP Per Capita							
Current \$	1,511	2,904	6,835	92	135	4.4	5.8
Constant (1949) \$	1,324	1,799	2,735	36	52	2.1	2.8
Implicit Price Index of GNP, 1949 = 100	114.1	161.4	250.0	41	55	2.3	3.0(d)

(a) Data from DBS, National Accounts, Income Explanation, 1926-56 and 1968 Preliminary.

(b) Projection based upon the medium projections of the Economic Council of Canada, The Canadian Economy from the 1960's to 1970's, Toronto Annual Review, Ottawa, September, 1967, p. 57.

(c) Assumes an average annual rate of growth of $4\frac{1}{2}$ per cent.

(d) Assumes an average annual rate of increase of $3\frac{1}{2}$ per cent for 1966-71, 3 per cent for 1971-76, and $2\frac{1}{2}$ per cent for 1976-81, averaging 3 per cent for the period.

TABLE 1-6

EMPLOYED LABOUR FORCE AND GNP, CANADA
ACTUAL 1951 AND 1966; PROJECTIONS FOR 1981

	1951	1966	1981	Total Percentage Growth		Annual Average Percentage Growth	
				1951-66	1966-81	1951-66	1966-81
	(a)	(b)	(c)				
Labour Force (000's)							
Total (b)	5,301	7,525	11,000	42	46	2.4	2.6
Employed (b)	5,175	7,258	10,700	40	47	2.3	2.6
GNP Per Employed Worker \$							
Current \$	4,090	8,005	16,350	96	104	4.6	4.9
Constant \$(d)	3,584	4,960	6,540	38	32	2.2	1.9

(a) Data from Bank of Canada, Statistical Summary, Supplement, 1963 and recent monthly.

(b) Includes the armed forces.

(c) The labour force projections are based upon estimates and projections of the Economic Council of Canada, op. cit., pp. 71-72.

(d) With an increasing proportion of workers in service industries, the output per worker is expected to increase at a somewhat lower rate 1966-81 than during the period 1951-66.

TABLE I-7

TOTAL LABOUR FORCE
BY INDUSTRY AND SEX
CANADA

ACTUAL 1951, ESTIMATED 1966, AND PROJECTED 1981

	1951	1966	1981	Total Percentage Change		Annual Average Rate Of Change	
				1951-66	1966-81	1951-66	1966-81
<u>In Thousands</u>							
Goods Industries	2,825	3,100	3,400	10	10	0.6	0.6
Service Industries	2,476	4,425	7,600	79	72	4.0	3.7
Total Labour Force	5,301	7,525	11,000	42	46	2.4	2.6
% Services	47	59	69				
<u>In Thousands</u>							
Male	4,133	5,285	7,200	28	36	1.7	2.1
Female	1,168	2,240	3,800	92	70	4.4	3.6
Total Labour Force	5,301	7,525	11,000	42	46	2.4	2.6
% Female	22	30	35				
Labour Force as % of Population	37.7	37.0	43.0				
Population per Labour Force Member	2.65	2.70	2.33				
Health Personnel, in Thousands	125	300	630	140	110	6.0	5.1
% of Total Labour Force	2.4	4.0	5.7				

SOURCE: Based upon data in various DBS publications.

TABLE 1-8

TOTAL EXPENDITURE
BY ECONOMIC CATEGORIES
ALL GOVERNMENTS IN CANADA
1951 AND 1966

	1951	1966	Total Per Cent Increase, 1951-66	Annual Average Per Cent Increase, 1951-66
<u>In Millions of Current Dollars</u>				
Goods and Services	3,271	11,286	245	8.6
Grants to Non-Commercial Institutions	173	1,808	945	17.0
Interest on Public Debt	553	1,805	226	8.2
Other Transfer Payments	859	3,298	284	9.4
Subsidies	128	516	303	9.7
TOTAL	4,984	18,713	275	9.2
% of GNP	23.5	32.2		
<u>In Millions of Constant 1949 Dollars</u>				
Goods and Services	2,806	5,565	98	4.7
Grants to Non-Commercial Institutions	148	894	504	12.8
Interest on Public Debt	485	1,119	131	5.7
Other Transfer Payments	754	2,267	201	7.6
Subsidies	112	320	186	7.3
TOTAL	4,305	10,165	136	5.9
% of GNP	23.2	28.2		
<u>Per Capita in Constant 1949 Dollars</u>				
Goods and Services	200	278	39	2.2
Grants to Non-Commercial Institutions	10	45	350	10.4
Interest on Public Debt	35	56	60	3.2
Other Transfer Payments	54	113	109	5.0
Subsidies	8	16	100	4.7
TOTAL	307	508	65	3.4

SOURCE: Calculated from data in DBS, National Accounts, Income and Expenditures.

TABLE I-9

PRICE INDEXES

CANADA

1951, 1966 AND PROJECTED 1981

	1951	1966	1981	Total Percentage Change		Annual Average Percentage Change	
				1951-66	1966-81	1951-66	1966-81
			(c)				
<u>Consumer Price Index(a)</u> (1949 = 100)							
Durable Goods	115.7	115.0	120.0	-1	4	0.0	0.2
Non-Durable Goods	113.8	134.9	170.0	19	26	1.2	1.6
Total Commodities Services	114.0	131.5	160.0	15	22	0.9	1.3
	112.7	176.6	320.0	57	81	3.0	4.0
Total Consumer Price Index	113.7	143.9	200.0	27	39	1.6	2.2
<u>Implicit Price Indexes(b)</u>							
Personal Expenditure on Consumers Goods and Services	113.9	145.5	200.0	28	37	1.7	2.2
Government Expenditure on Goods and Services:							
Current	116.4	215.2	460.0	85	114	4.2	5.3
Capital	117.1	166.6	260.0	42	56	2.4	3.0
TOTAL	116.6	202.8	405.0	74	100	3.8	4.8
Gross National Expenditure	114.1	161.4	250.0	41	55	2.3	3.0

(a) From DBS, Prices and Price Indexes for 1951 and 1966.

(b) From DBS, National Accounts, Income and Expenditure, for 1951 and 1966.

(c) Projections by the writer.

TABLE I-10

TOTAL EXPENDITURE
ALL GOVERNMENTS IN CANADA
1951, 1966, AND PROJECTION FOR 1981

	1951	1966	1981	Annual Average Increase, 1951-66	Annual Average Increase, 1966-81
				%	%
<u>Current Dollars</u>					
Total in Millions	4,984	18,713	70,000	9.2	9.2
Per Capita	356	935	2,735	6.7	7.4
% of GNP in Current Dollars	23.5	32.2	40.0		
<u>Constant Dollars (1949)</u>					
Total in Millions	4,305	10,165	21,000	5.9	5.0
Per Capita	307	508	820	3.4	3.3
% of GNP in Constant Dollars	23.2	28.2	30.0		

SOURCES: These are various and complex in nature. Education, health pensions, urban projects, antipollution measures, housing renewals and additions, income supplements and adjustments for low income persons, minimum income proposals, and many more equalizing measures can easily push the tax burden to 40 per cent by 1981. In terms of constant dollars there is a lag.

APPENDIX NO. II

THE COST OF MEASLES

From figures available through BCHIS and conservative estimates of physician care to measles patients, we believe that an estimate of the present annual cost to government for measles in British Columbia would be about \$197,000, made up as follows:-

(a) Hospital Care

Hospital days (BCHIS - 1967)	2,400	
Estimated average per diem	\$ 38.00	
Approximate cost of hospital care (2400 x \$38.00)		\$ 91,000.00

(b) Physician Care

(i) For Hospitalized Cases

Estimated cost of physician care for each hospitalized case	\$ 40.00	
Number of hospitalized cases (BCHIS - 1967)	328	
Approximate cost of physician care for all hospitalized cases (328 x \$40.00 - 10%)		12,000.00

(ii) For Cases Cared for at Home

Estimated cost of physician care for each measles case cared for at home	\$ 13.00	
Estimated number of measles cases per year	27,000	
Estimated number requiring a physician's visit (30% of cases)	8,000	
Approximate cost of physician care for all measles cases treated at home (8000 x \$13 - 10%)		94,000.00

Total	<u>\$197,000.00</u>
-------	---------------------

This estimate is based on general practitioners' fees and would be higher if the physician was a paediatrician or if the child developed complications which required a consultation or extended hospital care. The few children who develop extensive and permanent brain damage following measles and who require life-long home or institutional care also increase the cost of this disease. There are at least six such children, who can be expected to have a normal life span, permanently resident at Woodlands School at an annual cost (\$4,600 x 6) of over \$28,000, which, if extended over a fifty-year life span, would represent an outlay of 1.4 million dollars.

It is obvious that the cost of hospital and physician care for children with measles far outweighs the cost of preventing this disease and fully justifies making available enough money to immunize all susceptible children as quickly as possible.

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